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USSR Report

ENERGY

No. 75

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ELECTRIC POWER

PROPOSED MINSK NUCLEAR THERMAL ELECTRIC POWER PLANT DESCRIBED

Minsk PROMYSHLENNOST' BELORUSSII in Russian No 4, Apr 81 pp 24-25

[Article by department head A. Prostak, Belorussian Division, VNIPIenergoprom: "Minsk AES"]

[Text] Minsk currently uses one-fifth of the electricity and one-fourth of the thermal energy produced in Belorussia. And the capital's fuel and energy resources requirements are constantly growing. Thus, the use of heat and electricity increased 1.6-fold during this past decade, and consumption of them by the city will grow another [illegible].5-fold in the decade ahead.

Were we to meet these requirements by traditional methods, expenditures of natural gas and fuel oil would increase sharply (1.6-fold over the next decade, according to the forecasts). In this regard, the proportion of petroleum-based fuel would be at least 60 percent. Transport expenditures would increase correspondingly. Finally, burning coal and fuel oil has a negative impact on the air, both within the city and in the surrounding area.

In a word, the question has arisen of building nuclear heat sources for the residential areas of Minsk. Two ways are possible: create single-purpose heating plants (AST) or the combined production of heat and electricity at thermal electric nuclear power plants (ATETs).

A separate plan including existing central heat supply sources using organic fuel was examined as the base variant for 1990. A combination energy supply plan including a nuclear TETs and city-rayon boilers which would subsequently be converted into peak-load facilities for joint operation with the ATETs became the basic alternative solution to the problem. Variants for heating the eastern and southern portions of the city from nuclear power plants turned out to be less efficient.

The Belorussian Division of the VNIPIenergoprom [All-Union Scientific Research and Planning Institute for the Power Industry], jointly with the Gor'kiy Division of "Teploelektroproyekt" VGPI [All-Union State Planning Institute], worked out the technical-economic substantiation for construction of the Minsk Nuclear TETs. They recommended the domestically-produced water-cooled VVER-1000 reactors and TK-500-60 turbine units as the basic equipment for the ATETs.

Particular attention was paid to ensuring the safety of servicing personnel and the general populace. Effective protective measures and devices to prevent accidents or reduce their consequences by completely localizing the spread of radioactive material are anticipated for the Minsk ATETs. Reliable, powerful equipment for cooling the active zone, sealing premises and protecting the reactor shell will ensure safety even in case of a hypothetical accident such as instantaneous explosion in the primary circulation system. The sanitary-protective zone three kilometers in radius being created around the ATETs, in which people will not be permitted to stay, and the 25-km distance from the nuclear TETs to the housing developments in Minsk are an additional measure in the event of unforeseen and improbable large-scale breakdown.

As experience at the Novovoronezhskaya AES, which has water-cooled reactors similar to those which will be used in Minsk, has shown, there is practically no danger to the populace or the environment. The discharge of radioactive products outside the AES has been reduced to a safe level which is only several percentage points from the maximum allowable limits on discharges and is comparable to background radiation fluctuations, thanks to the plan adopted for aerosol treatment of air discharged from ventilation stacks.

With the start-up of the Minsk Nuclear Thermal Electric District Power Plant, the electric power deficit in the BSSR will be reduced and upwards of five million tons of reference fuel per year will be freed for other use. The burning of organic fuel in TETs-2 hot-water boilers and at the boiler on Kedyshko Street will stop, and they will be placed on stand-by; organic fuel expenditures at the city's remaining district boilers will drop, which will do much to improve the quality of the air. Some 150 small heating boilers will be eliminated, freeing about 700 servicing personnel for other work.

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ELECTRIC POWER

ALTAYSKIY KRAY ELECTRIFICATION PROBLEMS

Moscow IZVESTIYA in Russian 2 Aug 81 p 2

/Article by V. Rayevskiy, chairman of the Executive Committee of the Altayskiy Kray Soviet of People's Deputies: "Power Bridge to the Farms"; for previous treatment of this subject see JPRS 78,629, 29 July 1981, No 67 of this series/

/Text/ A crucial role is assigned to Altayskiy Kray in the program of the development of the agro-industrial complex, which was outlined by the 26th CPSU Congress. The farms of the kray have a large tract of fertile lands and the conditions for the keeping of livestock. The material and technical base of agriculture, which was created during the years of the preceding five-year plans, is a reliable basis for the development of the vitally important sector of the national economy on the scale stipulated by the Main Directions.

For this, of course, we have to solve a number of fundamental questions of the intensification of farming and animal husbandry in light of the implementation of the food program. These questions are diverse. There are many problems. Today I want to speak about just one problem, which is very important for our kray--the electrification of agricultural production.

The Ninth Five-Year Plan was the beginning for us of qualitatively new changes in this matter. During those years much was done to connect the farms to the state power system, to change over to new technology, particularly to mechanize a number of operations in such a labor-consuming sector as animal husbandry.

These processes developed rapidly during the 10th Five-Year Plan, when large complexes for the production of milk and pork and for the fattening of cattle were put into operation. The technology of fodder production, which made it possible to make as the basis of winter stocks of fodders such types of them as haylage, vitamin meal and enriched granules, underwent cardinal reorganization. It was during this period that poultry raising was completely converted to an industrial basis.

By the end of 1980 the level of electrification came to 95 percent, the saturation with electric motors increased 2.5-fold as against the Ninth Five-Year Plan and by 25 percent as compared with the beginning of the 10th Five-Year Plan. The kolkhozes and sovkhozes now consume 3.7-fold more power than in 1970. The foundation of a new sector is being laid--suburban sovkhozes are beginning to create capacities for the storage and partial processing of produce locally. All this became possible owing to the concern of the CPSU Central Committee and the government about the development of the productive forces of Siberia. In particular, the increase of the amount of capital investments in the production on its territory of foodstuffs and raw materials for the food and light industry is having an effect.

Today the kray has great potentials for sharply increasing during the first year of the new five-year plan the sale to the state of grain, vegetables and sugar beets. A stepped-up program of the output of other types of products has also been outlined. The first and main reserve here is the more efficient use of the state assets being allocated for the development of agriculture. As was stated in the Accountability Report of the CPSU Central Committee to the 26th party congress, which General Secretary of the CPSU Central Committee Comrade L. I. Brezhnev delivered, the distinctive feature of the party agrarian policy during the 1980's is the fact that the center of gravity is now shifting to the yield of capital investments, the increase of the productivity of agriculture, the extension and improvement of its contacts with all the sectors of the agro-industrial complex.

Having analyzed its task from this point of view, the Kray Soviet of People's Deputies determined in it the key items which will be of the greatest importance for the future of the Altay village. The further development of electrification is one of the most important items.

As was already stated, the electrification of the kray has developed rapidly. The farms themselves also participated enthusiastically in this work--each one wanted to be connected more rapidly with the state system and for this did not spare either capital or forces. As a result during the past 10 years the consumption of power per worker has increased nearly threefold, per 100 hectares of plowland--more than threefold. The level of the electrical mechanization of such processes in animal husbandry as the milking of cows increased to 92 percent, the supply of water at the farms--to approximately 80 percent, the cleaning of barns--to 70 to 80 percent.

Much work has been done. However, the electrification of the kray has not yet been completed. About 2,000 low-power diesel electric power stations, which divert many people from basic production for maintenance, repair work and the transportation of fuel, are still in operation. At the same time the problem of the quality and reliability of power supply and the completeness of electrification has come to the forefront. The point is that the quite explicable aspiration to connect as many farms as possible and as soon as possible with the state system has affected the quality of work: the networks are being developed radially, without being linked and without backup lines.

The supply of the kray with electric power is being carried out on the basis of "The Schedule of the Development of the Power System and Electric Power Networks," which is drawn up for each five-year plan. The schedule envisages both the meeting of the demands for power and the reliability of its supply. And so, the amount of work, which was outlined for the 10th Five-Year Plan, was only half fulfilled: more than 200 additional substations, about 2,000 km of backup lines and much more were not built.

The aspiration to decrease the cost of construction had the result that at the end of the Eighth Five-Year Plan and at the beginning of the Ninth Five-Year Plan many lines with too great a length of the spans were built. They are unstable against winds and ice. Now, it is true, it is prohibited to build such lines, but the question of the reconstruction of the old ones has not been resolved. But this is causing frequent interruptions in the supply of power. Let us cite an example.

On 15 March 1981 a line in Tal'menskiy Rayon broke down. Four kolkhozes were without power. After 2 hours power was fed to just one of them, while after 9 hours the supply of electricity to two more farms was partially restored. For this two brigades of electricians worked on the line. But due to the great length of the network (46 km), impassable roads, the lack of equipment with high road clearance and communications equipment the complete restoration of the supply of electric power dragged out for more than 2 days. As a result the kolkhozes failed to receive 78 quintals of milk; 65 quintals of the milk already milked turned sour. The missed milkings of the cows adversely affected the condition of the animals and the milk yields. Unfortunately, this case is far from the only one.

Speaking at the 26th party congress about the features of the agrarian policy during the 1980's, Comrade L. I. Brezhnev emphasized the role of all the partners of the farmer, their responsibility for the quantity and quality of the finished agricultural products. It seems that power engineers are among these partners.

Now, in addition to "The Schedule of the Development of Networks," "The Schedule of the Organization of the Operation of the Power System of Altayskiy Kray," which was drawn up by the Siberian Department of the Energosel'proyekt Institute, has also been approved for the five-year plan. It specifies the structure of administration and operation, the need for a production base, equipment, personnel and so forth. However, the power system of the kray is operating under conditions which do not conform to this schedule--there are 45 repair and production bases and operating centers too few. The construction organizations of the USSR Ministry of Power and Electrification, the Sibelektroset'stroy Trust and the Altay Elektroset'stroy Trust are denying the kray a contract or are accepting it in a clearly limited amount. The Ministry of Power and Electrification is not providing the kray with construction materials, electric network equipment, radio communications equipment and specialized transport.

The Altayskiy Kray Committee of the CPSU and the kray soviet executive committee have experience in cooperating with the USSR Ministry of Power and Electrification, as well as with a number of other union and republic departments. The result was at one time the discussion of the problems of Altay electrification during the 10th Five-Year Plan in the collegium of the ministry; then a special order of the minister and a joint decree of the Altayskiy Kray Committee of the CPSU and the kray soviet executive committee followed. By common efforts we were able to solve a number of important questions. But new ones arose. Thus, for example, it is necessary to establish on the territory of the kray a vocational and technical school for the training of power engineers, who are in short supply. It is necessary to enhance the role of the rayon associations of the new specialized organization--Sel'khozenergo of the RSFSR Ministry of Agriculture. As an experiment this organization has accepted in some villages for maintenance low-voltage networks in accordance with contracts. And this has yielded favorable results.

The service area of Altaysel'khozenergo could be enlarged, if this organization had the necessary funds for materials for keeping the lines and transformer substations under its control in operating conditions.

The implementation of all these plans will make it possible to increase the economic potential of the kray considerably, to improve substantially the social standard of living of the rural population and to fulfill all the assignments of the party on the further increase of the output of agricultural products.

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ELECTRIC POWER

CRIMEAN EXPERIMENTAL SOLAR POWER STATION

Kiev PRAVDA UKRAINY in Russian 28 Jun 81 p 4

/Article by N. Nesvitenko: "Electric Power Stations Without Turbines"/

> /Text/ The construction of the first experimental solar electric power station in our country with a capacity of 5,000 kW has begun in the Crimea, on the shore of the Sea of Azov, near the settlement of Lenino.

The energy of the sun will be transformed here into electric power in sequence: at first by heating water with sun rays to 300 degrees centigrade, and further, as at a conventional thermal electric power station, by means of a turbine-generator.

Work is also being performed here on the development of electric power stations, at which solar energy will be converted directly into electric power by means of film photoelectric cells. Work on the development of such cells is being performed at the Khar'kov Polytechnical Institute imeni Lenin, which is coordinating the scientific research in this area at 13 other higher educational institutions of the country.

I was shown a metal plate measuring 10 X 15 mm, on which a very thin layer of semiconductor was applied.

"This is the basis of the future photoelectric converter of solar energy into electric power," says Doctor of Physical-Mathematical Sciences Professor Boris Boyko, director of the work. "For the construction of large FESS's--photoelectric solar stations--a large number of film converters will be needed. Having a great efficiency and reliability of operation, they should be as inexpensive as possible to produce, so that the generation of electric power at FESS's would be competitive with its receipt at thermal electric power stations. For the present the production of film photoelectric converters is expensive. And our task is to reduce the cost of their production by more than a factor of 10."

The Khar'kov physicists consider fundamentally possible the development of an integrated cell for a photoelectric solar station on the basis of a multilayer film composition, which combines a converter of solar radiation, an accumulator of electricity and a system of the autonomous programmed self-control of its operation. And they are working productively on the solution of one of the main problems--the development of highly efficient, reliable, inexpensive photoelectric converters, which will become the heart of the future FESS.

"It will be possible to built photoelectric solar stations practically everywhere. Not just in regions of a high level of direct and solar radiation," relates Professor Boyko. "Owing to modularity--the unitization of the converters, depending on their number the FESS can be of difference capacities, for different purposes. These might be microstations of 1 or several watts for the supply of electric power to a radio transmitter, an aircraft beacon or lighthouse, for the powering of pumps at small farms. These might also be large FESS's for the supply of electric power to population centers, industrial enterprises of isolated regions."

During the day the photoelectric station will accumulate electric power and, as the need arises, will feed it into the external electric power network to consumers. While at night it will be able to use the electric power stored up during the day in the accumulators of the station.

The equipment customary for a thermal electric power station will not be present at an FESS, and it will operate without maintenance personnel. If some cell of the film converters of solar energy into electric power breaks down, an electronic servosystem will make this known.

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ELECTRIC POWER

BRIEFS

MOBILE POWER STATION GENERATORS--Tiraspol'--The first models of generators for mobile electric power stations have been assembled at the Tiraspol' Elektromash Plant. These units with a capacity of 2,000 kW were developed by associates of the Central Technological Planning and Design Bureau of Large Electric Machines (Leningrad Oblast) and engineers of the enterprise. In the design of the giant generators innovations are used, which assure their reliable operation in different climatic zones. The machines are superior to similar foreign equipment in many operational characteristics. They are lighter and take up less space. After assimilating the series production of the generators following tests, the Moldavian enterprise will delivery them to the Bryansk Machine Building Plant. There these machines will be furnished with diesel engines and will be installed on railroad flatcars or in boxcars. Such electric power stations on wheels are designed to provide electric power to consumers who so far have not been able to be hooked into the lines of power systems. /Text/ /Kis[illegible]v SOVETSKAYA MOLDAVIYA in Russian 4 Jul 81 p 2/ 7807

YUZHNO-UKRAINSKAYA AES TURBINE--The Yuzhno-Ukrainskaya AES, which is under construction, has received the most powerful of domestic turbines for atomic power engineering--1 million kW. It was produced at the Khar'kovskiy turbinnyy zavod Production Association. The series production of such large units has begun. "The turbine has great operating advantages," says the plant's chief designer Yuriy Kosyak. "The huge shaft of the unit rotates more slowly than a conventional shaft. As a result the vibration has been reduced considerably and the reliability of the turbine has increased. Its development required the solution of a number of technical problems." Following the Yuzhno-Ukrainskaya AES the Kalininskaya AES will receive a 1 million kW turbine. The association has prepared for the expansion of the production of equipment for atomic power engineering. The largest lathes and milling machines in the country with program control have been installed in the new building. These giants are capable of machining parts weighing hundreds of tons with a precision of 1 micron. An original automatic unit, which was developed by scientists of the Institute of Electric Welding imeni Paton of the Ukrainian SSR Academy of Sciences, made it possible for the first time to join very large blocks of heat-resistant steel. A balance stand--a chamber in which a diesel engine could be easily placed--has also been built. A near space vacuum is ensured within this metal cylinder with walls of impressive thickness. A multiton rotor, which is accelerated here to maximum speeds, is then carefully balanced by means of computers. /By M. Khabinskiy/ /Text/ /Kiev PRAVDA UKRAINY in Russian 13 Aug 81 p 2/ 7807

TYAN'-SHAN' SOLAR HEATING CENTER--Alma-Ata--The construction of a solar heating center has begun in the region of the new astrophysics observatory, which is being built in the Tyan'-Shan' mountains at an altitude of 2,700 m above sea level. This plant, which was designed by Alma-Ata specialists, will heat the homes of the mountainous scientific center. It will ensure the heating of water to 60 degrees, using the energy of daylight. During cloudy weather standby sources of electric power will be connected to the system. The scientists and designers of Kazakhstan are devoting particular attention to the use of renewable energy sources. They are developing solar heating centers for kolkhozes, sovkhozes, other enterprises and institutions. Here, for example, a solar desalinizer of sea water for irrigation systems has been designed. A solar electric power microstation, which was built with the participation of specialists of the institute, began operating recently in the area of the Southern Balkhash. It is designed for recovering water from wells. /By V. Ivanov/ /Text/ /Moscow TRUD in Russian 11 Aug 81 p 1/ 7807

SOLAR DEVICES--The collective of the laboratory of coatings of the Physico-Technical Institute of the Uzbek SSR Academy of Sciences by means of various instruments and accessories is attempting to convert the heat of the sun into mechanical energy and electric power. Good results in this direction already exist. Units and devices, which make it possible by means of the heat of our star to prepare dinner, to pump water from wells and desalinize it, have been recommended for production. /Text/ /Moscow SOTSIALISTICHESKAYA INDUSTRIYA in Russian 24 Jul 81 p 2/ 7807

SOLAR-HEATED CAFE--In Avan', a new region of Yerevan, a cafe--the first building in the republic in which the energy of the sun will be used for heating and water supply--is being built. The plan was drafted at the Armenian Scientific Research Institute of Construction and Architecture. Solar arrays should be used as the roof of the building (as is shown in the drawing /drawing not reproduced/). /Text/ /Moscow NEDELYA in Russian No 30, 1981 p 4/ 7807

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MACHINEBUILDING DEFICIENCIES HINDER COAL INDUSTRY

Kiev PRAVDA UKRAINY in Russian 4 Aug 81 p 2

[Article by V. Puzikov and V. Savchenko (Donetskaya Oblast): "The Miner's Strength Is in Machinery"]

> [Text] The 26th CPSU Congress set large-scale tasks for further development of the coal industry during the 11th Five-Year Plan and pointed out concrete ways to solve them. One of them is the reequipping of underground mines and the introduction of new machinery at the mine face.
>
> As is well known, the main scientific research and design development of new machinery for miners, the series production of a large amount of it, and the introduction of innovations at coal enterprises are being executed in the Donbass. These correspondents' report from the Donbass tells how these problems are being resolved and how mutual interactions among scientific institutions, machinebuilding plants and mines has been arranged.

Machines for the Mine Face

For more than 20 years Gorlovka miner I. S. Litvinov hacked coal with a mining pick. When tunneling machines appeared at the mine, Communist Litvinov was one of the first in the collective to master the innovation and he began to work as a machinery operator. One and a half years ago Ivan Stepanovich brought his son--Komsomol member Yuriy--to the mine face and turned over to him not a miners' pick but a complex of complicated equipment.

Yes, the miners have increasingly at their disposal new machinery--highly productive mechanized longwall mining machines, tunneling cutter-loaders, and small-scale mechanized equipment. A remarkable step in increasing capacity during reequipping of the mines was taken during the 10th Five-Year Plan. The ANShch longwall mining equipment and mechanized supports for steep-bedded seams were developed and brought into series production. The Titan crushing and gobbing complex, a pneumatic gobbing complex for work at sharply and slightly slanting seams, traveling and lifting machines, and much other equipment were created.

The miner's strength is in the machines. These words we have often heard from the miners. We heard them also from brigade leader and delegate to the 26th Congress of the Ukrainian Communist Party A. Ye. Nikolayev when we spoke with him at the sophisticated Oktyabr'skaya Underground Mine.

"We are friends with the machinery. Look at this: mechanization at our mine has now reached the 90 percent level," said Aleksandr Yekinovich with pride. "There are high-capacity machinery complexes at all longwalls. It is especially heartening that the machinery is constantly being updated and is becoming increasingly perfected. Literally yesterday we completed the assembly of modernized supports that have posts with double hydraulic extensibility. We tested them and we were convinced: this is power!"

It is mechanization that helps this brigade and the whole collective of the Oktyabr'skaya Underground Mine to increase systematically the mining of coal and to carry out tasks and socialist commitments successfully.

Mechanization has stepped forward not only at gently sloping seams but also st steep ones. For example, at the Underground Mine imeni A. I. Gayevoy of the Artemugol' Coal Production Association, the mechanization of coal mining barely exceeded 18,000 tons in 1976, while in 1980 it reached 300,000 tons. It is characteristic that growth is continuing. Right now 43.6 percent of the coal is mined by the mechanized method. And mainly at thin, sharply dipping seams, where, until recently, manual labor predominated.

In speaking about the oblast's coal mining enterprises as a whole, the introduction of new machinery and increase in its utilization effectiveness raised the level of excavation of fuel from mine faces that have integrated mechanization by an average of 12.8 percent during the 10th Five-Year Plan, while last year it was 51.5 percent, and at underground mines of the Donbass's Central region, where steep seams are being worked, it was almost doubled in volume.

But despite all this, mechanization at some mines remains inadequate. How well coal enterprises' demand for mining equipment is being satisfied can be traced in the example of Gorlovka's coal enterprises. At the city's party committee we were introduced to some unhappy figures. During the 10th Five-Year Plan 106 mechanized complexes were requested, but only 68 were received, 18 instead of 31 tunneling cutter-loaders arrived, and orders for coal-excavating combines were satisfied by only one-third.

The miners have major complaints against the scientists, designers and machinebuilders: there are still no reliable machines for the excavation of thin and extremely thin seams, mining from which is continually increasing. The time spent creating such machines is being stretched out excessively. In all our conversations the thought stood out that the designers and machinebuilders should, in creating new equipment, listen more attentively to the recommendations of the miners, who speak from experience. Paradoxes are encountered where they have been disregarded. Here is one of them. The LMP-10 hoist, which the Odessa plant Krasnaya gvardiya at one time shipped to the miners, was marked by simplicity of design and reliability of operation. Then the plant modernized the hoist. For the better, it would seem, but the opposite occurred.

The LMP-13 is low powered, for it has one less transmission gear than its predecessor. It is now heavier, less convenient, and it is more difficult to repair--it has to be brought to the surface. Often the belt brake goes out of order--the senior mechanical engineer for mineface equipment of the Komsomolets Underground Mine, A. N. Pavlov, enumerates the deficiencies. "We have about a hundred of these hoists now. We went to the plant with our requests and recommendations, and we met with the chief engineers and the chief designers, but things haven't changed a bit."

"What is true is true. At times, in the pursuit of modernization, the plants take better equipment out of production, and produce instead something fit for the wastepaper basket," maintained senior mechanical engineer and chief engineer of the underground mine M. S. Zhitlenok. "Why do they bury in oblivion machines that have already proved themselves? Thus, the IKT combine also was taken out of production, although for our environment it is irreplaceable. Especially for working a seam 0.4 meter in thickness, where you do not take a tunneling machine. Or a BIK drilling installation. We have two of them. We ask for one more for cutting blind shafts, but they tell us that they have already taken it out of production. Soon, they say, there will be a new installation. But when?"

The Plant's Potential

"It's true that we, the machinebuilders, are in great arrears to the miners," said brigade leader of mechanics-assemblers V. N. Zakharov when we came to department No 3 of the Yasinovataya plant. "Let's say that in a month we assembled seven tunneling cutter-loaders, but we could have assembled more. Trouble with deliveries, first of bearings and then of flight chains, are telling."

The Yasinovataya Machinebuilding Plant is the only enterprise in the country that specializes in tunneling machinery. In the past 10 years the products mix has been almost completely updated, and output thereof has been increased by 60.3 percent. At the same time, the demand for tunneling cutter-loaders, shaft loaders, equipment for drilling bore holes, and hoists is being satisfied by less than half.

"That same assembly department No 3 has exceeded its design capacity 1½ times," says plant director M. D. Trutsunenko. "Our enterprise is very much in need of rebuilding. It was called for by the 11th Five-Year Plan, but the capital investment still has not been allocated."

The production effort is poorly provided with supplies and equipment. Thus, last year the plant was the victim of a shortfall of more than 1,400 tons of rolled metal and more than 1,000 tons of cast iron. The arrival of many outfitting parts is very much delayed. All this, of course, disturbs the collective's work rhythm, and slows the assimilation of new equipment and the reliable and high-quality manufacture thereof.

The machine-tool inventory of the enterprise is worn and obsolete. Incidentally, not just here. The same can be said about the Druzhkovka and Gorlovka machinery plants, which produce equipment for underground mines.

"Parts of high precision and high quality are required for the new machines. They should be made on new machine tools," was the wish expressed by milling machine operator of department No 8 of the Druzhkovka plant and Hero of Socialist Labor I. F. Kaliberd. "I have stood behind my machine tool for 33 years now. Very well—experience helps. But how is a youth to work on machine tools that long ago outlived their lifetime?"

The machinebuilders of the Gorlovka Plant imeni S. M. Kirov also are beholden to the miners. This year they should have produced two Strela-77 drill installations monthly, but they did not cope with the task. A complicated situation was created with the output of the highly productive K-103 cutter-loader. According to the ministry's task, 10 machines were to have been manufactured in the first half of the year, but until now not even one has been completed.

The plant's specialists cite as justification a multitude of reasons. They refer, in particular, to the fact that the design developers of the appropriate institutes, in proposing to introduce new machines, do not always consider the actual potential of the enterprise and the degree to which it is equipped with machinery.

"And how are things going with the agreements about collaboration between the plant and the institutes? Indeed, they have been called upon to prevent such a lack of coordination," was the question put to S. G. Lokshinskiy, chief engineer of the enterprise's SKB [special design bureau].

"Agreements have been concluded, but everything remains, unfortunately, on paper," Stanislav Grigor'yevich confessed. "The institutes send us engineering documentation that is not complete. The working drawings, as a rule, are not in accord with our technologies and standardization service."

The machinebuilders made many other similar remarks against the designers, subcontractors and suppliers. Undoubtedly, many complaints are well-founded. But these alone, it would seem, are not the cause of the machinebuilding plants' chronic underfulfillment of the plans for new machinery.

Take just the use of productive capacity and equipment. In the past 5 years the shiftwork utilization factor for metalworking equipment at the Gorlovka machinery plant has been reduced from 1.8 to 1.45. This indicator is still lower today at the Druzhkovka and Yasinovataya plants--1.38 and 1.26, respectively.

Or take this question. The enterprises are experiencing a shortage of castings. Meanwhile, the policy that designers, engineers and workmen be engaged in joint creative searches for ways to reduce the metals intensiveness of machines and equipment, which remain, as before, excessively high, is not being observed. Let's say that in machinery department No 1 of the Gorlovka machinery plant, 484.6 kilograms of metal go into the waste during the machining of KShZM bevel gears, while the net weight of the finished part is 77.4 kilograms. And this is not a unique example.

The miners justifiably criticize the machinebuilders for low quality of underground mining equipment. For the time being, the output of machinery with the State Emblem of Quality still has not reached even 6 percent of total production volume at the Gorlovka and Druzhkovka plants.

What kind of a role do party organizations play in all this? Three times the party committee of the Gorlovka machinery plant examined at its meetings progress in fulfilling plans for new equipment and each time it verified the failures. However, its decisions on these questions were not concrete in nature, and they repeated each other. Party organizations of the plants are not paying enough attention, in our view, to raising the efficiency of the scientific and technical councils of the enterprises on questions of creating new equipment and of reequipping production facilities.

From Idea to Introduction

The scientists and designers who are called upon to provide a high level of technical progress in the coal industry--what are they working on today, and how are they working?

During the 10th Five-Year Plan more than 80 models of machines and equipment were produced and 62 initial industrial lots of separate specified items were manufactured. Among them were the A-70M coal cutter-loader for excavating coal at narrow, steep seams, Strela-68 drilling machines, the 1-ANShch set of equipment, M-87P supports for roofs that are difficult to control, new battery-operated electric locotives, and other things. Scientists and designers have developed and are executing many measures for raising the reliability of equipment.

But it still must be confessed that science and, together with it, design-development thought, in this branch still do not keep pace with the needs of the times. We were convinced of this not only at the underground mines and machinebuilding plants, but also at the Donets Scientific-Research Institute for Coal (DonUGI) and Dongiprouglemash [Donetsk Branch of the State Design-Development and Experimental Institute for Coal Machinery], where substantial creative efforts aimed at solving questions of the integrated mechanization of labor-intensive operations in the mining business have been concentrated.

DonUGI is creating new equipment for working gently and sharply sloping seams and equipment for unmanned coal excavation. It must be said right off that successes in this area are extremely modest. Not very many innovations that would make the miners proud have been born in the institute.

During the last five-year plan the average annual yield from scientific developments per 1 ruble of invested expenditures here was only about 2 rubles and 13 kopecks--lower than in a large number of institutes that are associated with other branches of industry. Tasks on creating six new machines have not been completely fulfilled during the last five-year period.

The institute's plans suffers from a multiplicity of projects, there being little promising exploratory research. Not more than two or three scientific workers are busy on each project. DonUGI is overloaded with tasks that are the concern of other scientific institutions--this consists of 40 percent of total work volume.

Because of all this, the institute's manpower and funds are being dispersed, the effectiveness of its creative studies is being reduced, and the potential for concentrating efforts on the main problem is made complicated.

In our discussions with UkSSR Minugleprom [Ministry of Coal Industry] workers and scientists and designers, the thought crept in of a lack of consistency and coordination in the actions of institutes of various subordinations that insist on manufacturing and putting into production only their own developments.

DonUGI, having been named the prime institute for solving problems of scientific and technical progress in mining coal at thin and sharply dipping seams, found itself, in essence, without adequate rights to carry out its growing responsibilities. There is no coordination or unified actions between Dongiporuglemash and other coal machinebuilding institutes and plants on creating new equipment for the miners. There is much harm from this.

Many of the deficiencies that are characteristic of DonUGI apply also to Dongiprouglemash. Its collective has failed deadlines for carrying out some important work. During the last five-year plan, out of tens of tasks for developing equipment for thin gently and sharply sloping seams, and also for the unmanned excavation of coal, only five were carried out. Serious design miscalculations have been permitted in the design of experimental machines. For example, at the Yasinovataya Machinebuilding Plant, during the process of the technological refinement of the institute's drawings for the Soyuz-19U tunneling complex, which was intended for strong rock, 50,000 (!) different changes were introduced.

Cases can be cited and cited, where there was an unjustifiably long time elapsing between an idea and its development and introduction of the equipment.

...The development of preliminary designs and working drawings for an experimental model of the KMD-72 longwall mining machine lasted 9 months. The complex was made in 4 years and 3 months. Underground mine tests stretched out for 4 years. And more tnan 6 years were spent manufacturing a test lot. As a result, before coming into series production, the machine was no longer new and became obsolete. And indeed, we are speaking about solving the problem of unmanned coal excavation!

As is also the case with DonUGI, the plan for Dongiprouglemash's work is overloaded with minor, low-value projects.

"We are very much burdened with such assignments, which do not have a direct relationship to the institute, or to coal," deputy director for scientific work of DonUGI Ye. T. Proyavkin complained in a conversation with us. "We prepare a large number of all kinds of inquiries, validations and recommendations for UkSSR Minugleprom. But indeed all this could have been done successfully by the ministry's current-operations workers."

The problems of the integrated mechanization of manual labor at underground mines is extremely, extremely urgent. However, the amount of design development on creating machinery for excavating narrow, sharply sloping seams is being reduced. While in 1975 the amount of this work was 23.7 percent of total work volume, last year it was 15.4 percent.

One of the causes of this is the weakness of the test and experimental base of the institute, which does not have its own testing grounds.

We had to encounter many other problems at the plants and institutes and during meetings with scientists, designers and machinebuilders. We heard many recommendations. Some of them were debatable, others require thorough study. But during the conversations one thing was sounded by many mouths, perhaps the main thought: the problem of increasing the mining of coal can be solved by radical reequipping of machinebuilding activities that produce mining equipment. For this purpose, a rise in the effectiveness of scientific, technical and design developments, the surmounting of bureaucratic and psychological barriers, precision in planning, the strict coordination of actions, close cooperation of scientific-research and design-development institutes and of manufacturing plants, and high operating discipline are necessary.

Yes, there are many problems, and they must be solved immediately. Give the motherland more coal--this is the concern not only of the miners but also of the scientists and designers who are called upon to create new equipment and of the machinebuilders.

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GAS CONDENSATE ADAPTED FOR USE IN GAS-FIELD INSTALLATION DIESELS

Moscow IZVESTIYA in Russian 31 Jul 81 p 1

[Article by G. Shcherbina (Chelyabinsk): "Northern Fuel"]

> [Text] The production of diesel fuel directly at gas-condensate fields will yield great savings for the national economy.

Ten years ago gas condensate was considered simply a byproduct of the recovery of gas. But then it quickly began to be converted into a separate category of mineral raw-material for petrochemistry. Major gas-condensate fields were developed in regions difficult of access in the North of the European part of the USSR, in Siberia and in the Far East.

But now this obstacle arose in its path: exporting the condensate from the remote regions where it is recovered to the refineries is very complex, and not at all advantageous economically. According to the specialists' estimates, in order to deliver 1 ton of fuel to Taymyr, for example, 1½ tons of the same fuel would have to be consumed.

But is it impossible to change the situation? A group of young scientists of the Chelyabinsk Polytechnical Institute under the supervision of the deputy dean of the motor-vehicle and tractor department, Candidate of Engineering Sciences A. N. Lavrik, pondered this. Relying on recent scientific achievements, the group, with the creative participation of the Baku VNIIgaz [All-Union Scientific-Research Institute for Natural Gas], proved that the use of condensate as a fuel for diesels locally, directly at the places of recovery, would enable losses of the raw material and expenditures on obtaining fuel to be reduced to a minimum without worsening the capacity or the economic indicators of the diesels, and also without reducing their longevity. In this case, the percent of smokiness and toxicity of the exhaust gases also is greatly reduced. The group designed a small-scale installation for obtaining this fuel.

"We had to work with all our might," said A. Lavrik. "We were in close contact with oil and gas exploration expeditions in various parts of the country. We are conducting experiments at the Urengoy and Medvezh'ye gas-condensate fields. In Yakutia we are participating in development of the Mastakhskoye and Middle Vilyuy fields and of the Markovskoye field on the BAM [Baykal-Amur Mainline].

Simultaneously with the creation of the technology and the installation for producing diesel fuel from gas condensate at the place of recovery, the scientists are working on a change (applicable to the new fuel) of designs of the fuel apparatus of the diesels.

What kind of advantages does introduction of the Chelyabinskers' development promise? Here is just one example. An analysis of the operation of the small-scale installation for producing diesel fuel at Tyumenskaya Oblast fields indicated that in-house needs for this fuel can be completely satisfied locally, dispensing with its importation.

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GREAT PROSPECTS PREDICTED FOR GAS HYDRATE DEPOSITS

Baku BAKINSKIY RABOCHIY in Russian 22 Jul 81 p 2

[Interview with Nikolay Vasil'yevich Cherskiy, chairman of the Presidium of the Yakutsk Branch of the USSR Academy of Sciences and corresponding member of the AN SSSR, by V. Zhuravlev, an APN correspondent: "Solid Gas Prospecting and Prospects"]

> [Text] Soviet scientists have revealed previously unknown properties of natural gases. It turns out that, under definite ratios of temperature and pressure, they can occur in a solid state and form deposits.

"We have already begun to develop these fields and, probably, in the future they will become an important source of hydrocarbon raw materials," said Nikolay Vasil'yevich Cherskiy, chairman of the Presidium of the Yakutsk Branch of the Siberian Division of the USSR Academy of Sciences and corresponding member of the AN SSSR [USSR Academy of Sciences], in a conversation with the APN [Novosti Press Agency] correspondent. "The reserves of hydrocarbons in the so-called gas-hydrate state are severalfold greater than the total reserves of coal, petroleum and ordinary gas on our planet."

[Question] What are gas hydrates?

[Answer] Externally they are similar to opaque ice. They are formed in the earth's crust, more precisely in its upper sedimentary cover, from a combining of methane, ethane, propane and other gases with water at a pressure of 0 to 250 atmospheres and at temperatures below 0 or slightly above--up to 20 degrees Celsius.

Computations that have been made indicate that favorable conditions for the forming of solid gas in the earth's crust exist on 27 percent of the dry land, mainly in areas where permafrost and glaciers occur, and also in nine-tenths of the area of the bottom of the World Ocean. The whole North of the USSR (about half the country's area), 63 percent of Canada and 75 percent of Alaska, as well as Greenland and Antarctica, are promising dry-land areas for the industrial accumulation of gas hydrates.

The world's thickest permafrost is in Yakutia, and all its manifestations are encountered here, so this region will serve as an excellent natural proving ground for studying all possible problems connected with solid gas.

[Question] What, in your opinion, is the most complicated aspect in the practical realization of the enormous prospects for using the solid gas?

[Answer] The exploitation itself of a gas-hydrate field. Scientists have come to the conclusion that the gas should be converted from the solid state into a free state directly in the ground.

But development of the fields is as yet fraught with substantial engineering difficulties and additional material expenditures, because, according to geophysical research data, Siberian geologists have found about 30 areas where gas-hydrate deposits could exist, but in practice only one is being operated--the world's first, the Messoyakha field in the North of Krasnoyarskiy Kray. For more than 5 years it has been supplying gas to Noril'sk.

[Question] When will we be close to solution of the problems of using solid gas?

[Answer] Gas hydrates have an enormous future, but we are only approaching the solution of a multitude of theoretical and practical problems. Right now the important step of establishing the problem as a scientific area and of forming and developing the underlying ideas and methods has been completed. The next step, a more intensive and detailed study of questions of a general and applied nature is no less labor intensive, but, at the same time, it promises to be more liberal in practical return.

In the next 1½ or 2 decades, the development of gas-hydrate deposits on a production scale will be approached.

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SOIL-FILLED CANVAS POCKETS ARE CHEAPER PIPELINE BALLAST THAN CONCRETE WEIGHTS

Moscow PRAVDA in Russian 28 Jul 81 p 2

[Article by Engineer G. Yerlykov: "On an Underground Sail"]

> [Text] An important scientific and technical experiment is being performed on one of the western construction segments of the Urengoy-Gryazovets-Ivatsevichi-Dolina gas pipeline. A large-diameter pipeline with heavy weights made of...polymer fabric has been laid in the ditch. This will yield a great economic benefit. Transport costs are cut 10-fold.

At first glance, the Soyuzgazspetsstroy builders were engaged in a strange business. At the edge of a water-filled ditch in which a pipe, gleaming with insulation coating and almost a man's height in diameter was floating, they were spreading out a polyethylene fabric covering 5 meters long and 1½ meters wide, which resembled an unfurled sail. Then pockets that had been strapped to this unusual sail along its edges were held in an open position, by a tubular fixture. A swampgoing excavator drove up, grasped the sail and laid it on the pipeline with the pockets facing up. A new stroke of the shovel and it filled the pockets to capacity with soil that it had picked up. And then when the pipe, under the weight of the soil, had settled to the designed level, backfilling proceeded in the ordinary manner. The entire operation took a five-man team about 20 minutes.

"This brigade," states the trust's chief operations engineer G. Samoylovich, "is capable of rigging 300-400 meters of 1½-meter diameter pipe with ballast per shift. If ordinary reinforced-concrete weights were used, then a section about one-tenth as long could be done in the same length of time. Neither a lack of roads nor an absence of or a breakdown of the machinery will, in practice, stop the work. The weight of each set of the new ballast is about 90 kilograms. If the machinery cannot negotiate the section, two workmen can deliver the sail to the laying point and load the pockets with soil."

The chief operations engineer cites some impressive figures. The weight of each reinforced-concrete weight is more than 4 tons. And they are installed on the pipe one after the other at short distances—1.4 to 2.3 meters. About 800 tons of reinforced-concrete structure are required per kilometer of trunk pipeline. What a large amount of cement and metal has to be buried, in the literal sense of the word, in the swamp. With the container-type ballast, the total weight of materials per kilometer does not exceed 20-30 tons. The difference is considerable. And indeed, the difficulty with which each kilogram of freight is delivered to the construction project, especially in places difficult of access, is well known.

The "Main Directions" for the 11th Five-Year Plan set the task of developing and introducing technology for year-round construction of pipelines in regions that are difficult of access and have complicated natural and climatic conditions. And this is what the originators of this innovation--workers of Orgneftegazstroy [State Trust for the Introduction of Advanced Operating and Work Methods in the Construction of Oil and Gas Industry Facilities] of Minneftegazstroy [Ministry of Construction of Petroleum and Gas Industry Enterprises] and the Central Scientific-Research Laboratory for Polymer Containers (TsNILpolimerkonteynerov) of the Soyuzplastpererabotka of Minkhimprom [Ministry of Chemical Industry]--were striving toward. Much has already been done, but improvement of the design of the "underground sails" continues. It is not so simple to use the containers where the soil has organic inclusions--peat, for example. In these cases, ordinary earth or gravel must be brought in. A quarry for this can always be found in proximity to the route.

The biostability of existing synthetic materials--capron canvas, canvas made of thread-stitched container material, rubber-fabric material, polyethylene film, and others--have so far been tested by the standard laboratory method. The results have been positive, but for relatively short periods of operation. Materials tests have started directly in soil at places where pipelines are being erected, but apparently the results will not be obtained soon here. However, some conclusions can already be drawn on the basis of experience that has been gained. As is known, pipelines are insulated these days basically with synthetic coating materials. They have behaved practically irreproachably in the ground. There are no bases for supposing that the underground sails will be any less reliable and durable than the insulating material.

The advantages of the large-scale introduction of the containers is unquestionable. As industry masters the output of materials with biostability guaranteed for any soil microflora, it will be possible to replace reinforced-concrete weights everywhere with the containers. This promises great savings of resources.

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EXPLORATORY OIL DRILLING BETWEEN KURA, IORI RIVERS PROGRESSING

Baku VYSHKA in Russian 6 Aug 81 p 2

[Article by V. Gol'tsev (Sazhdag): "In the Persistent Search"]

> [Text] The search for rich stores of natural fuel has been going on for many years in the central and western regions of Azerbaijan. The exploratory work reached especially wide scope during the 10th Five-Year Plan, when a promising field was opened up in Eastern Georgia.
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> The socialist competition that was started with the Georgian drillers at the initiative of S. Nagiyev, drilling foreman of the Gobustan UBR [Drilling Administration] and Hero of Socialist Labor, served as a powerful push for the work of the Azerbaijan drillers, who are determining the petroliferousness of these areas. They achieved remarkable success, for example, at the Zardob area, which VYSHKA recently wrote about. An inflow of industrial crude had been obtained from two wells drilled there.
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> High labor enthusiasm reigns these days in the Gobustan UBR brigades, which are searching for oil and gas deposits at Kura and Iori interriverine structures. The drillers are applying all their efforts, experience and knowledge to successfully implementing the decisions of the 26th CPSU Congress and the 30th Azerbaijan Communist Party Congress.
>
> ...Sazhdag is one of the remote exploration sites. This report tells how the drillers are living and working there and what successes they are achieving.

Alisker Alekperov is one of the veterans of the Gobustan Exploratory Drilling Administration. He has been working as a drilling foreman at remote exploration sites for 21 years now, the last 4 in Sazhdag. During this time he has already drilled one deep hole and now, along with his partner, Akhmed Mustafayev, is accomplishing the penetration of a second one at this same structure. Figuratively speaking, drill rig No 3 was aimed at Upper Cretaceous and Eocene sediments, in which the presence of gas and oil in the Kura and Iori interriverine area has already been determined. Now the job is to obtain an inflow of fuel of industrial significance.

Our conversation turned, naturally, to the discoveries of the Zardob field--to the brigade of foremen Agigat Aliyev and Sayad Mamedov, whose remarkable success provoked here in Sazhdag great joy, a tide of creative energy and a striving to gladden the republic with achievements of this kind.

"I think," says Alekperov, "that we are close to the target. Our brigade recently discovered the roof of the Eocene sediments at a depth of 3,190 meters and went through unstable rocks with the drill string. Now as the wellbore depth increases we sample the hole with a formation tester every 20-30 meters, in accordance with the geological-engineering order. Drillers Makhmudov, Magerramov and Odzhakkuliyev, derrickman Salmanov, mechanic Makhmudov, motor mechanics Yolchiyev and Allakhverdiyev, and others are working with all their might and conscientiously.

...When several drill rigs at Sazhdag started their racket here, specialists and workers of various trades were needed. There were many who wanted to work here. But the majority of the lads who came here from Akstafa and Kazakh and other nearby places had a vague notion about what drilling is like. Of course, not all of them became drillers. Anyhow, the new arrivals to the brigade fell under the guardianship of older, more experienced comrades. And foremen Alekperov, Ragimov, Mustafayev and Zeynalov--those who had begun to make the uninhabited canyons of Dzheyranchel' habitable, transmitted their experience to the youths and taught them about an honest attitude toward labor duty.

The atmosphere of comradeliness and goodwill that reigns here helps to promote a display of initiative and helps each worker to discover his capabilities more completely. Machinery operator Ibragim Alekperov and motor mechanic Rashid Novruzov, for example, adapted a supplementary water tank for cooling the diesel engines. In the summer, when the engines strongly heated up, this helped the work splendidly.

It is very hot in Sazhdag. The locality is surrounded by low hills. A sultry heat haze hangs the whole day over the vast gray-and-yellow bowl. Only when the sun sets behind the Kura does life-giving coolness break through here. But the metal does not cool down, even at night, and not for an hour does the drill rig fall silent. Around the clock, changing bit after bit, the drillers win the cherished meters.

"The path to the oil is difficult," says Nazirov. "All possible kinds of complications occur during drilling. But the brigade is always on the alert. Thus, recently, when the Upper Eocene was opened up, the formation began to absorb the drilling mud. Timely steps were taken. By means of inert fill--rubber crumb and mica--we managed to block up a crevice in the borehole. Moreover, we poured cement into this spot. Right now we are preparing to lower the intermediate string. Ahead is the most important stage of the operation, but we are hoping to carry it out well."

Drilling foremen Gadzhi Zeynalov and Ragim Ragimov also expressed firm confidence in the job's success. The brigade they supervise is drilling hole No 5 at this site, with a designed depth of 5,100 meters, at above-plan speed. The drillers have successfully carried out the plan and socialist commitments for the first 7 months of this year and are continuing now to work at the same pace.

Prospecting for new oil and gas deposits is a major state matter. The necessity to speed up the exploration and introduction into development of promising fields of nature's fuel was mentioned at the 26th CPSU Congress and the 30th Communist Party of Azerbaijan Congress. That is why society's tireless attention is riveted on how the explorers of the earth's depths work today and what successes they are achieving.

Minister of Petroleum Industry Comrade N. A. Mal'tsev recently visited the central and western regions of Azerbaijan. Here he familiarized himself with the status of the buildup of the oilfield's support facilities and the prospecting and exploration work at promising areas of Sazhdag and Zardob, and he gave advice and recommendations about improving the technical and economic indicators for drilling, opening up formations and sampling them, and improving the technology.

In brief, the tasks that face the drillers are great, and therefore I would like to tell about what is preventing them from being accomplished with the most effectiveness.

Right now four holes are being drilled in the Kura and Iori interriverine area, one of them at the new Gyurzundag site, where, simultaneously, another rig is being erected. The road to them from Poylu village is not short--about 100 kilometers. Because of the poor road, especially during rainy weather, it is impossible to go there. A water line still has not been laid there.

Living conditions for the drillers leave much to be desired. It is clean in the rooms of the workers' dormitory in Poylu village, and the linen is changed regularly. But washing up after work is a problem. There are no basins in the wash stands, and one can only dream about taking a shower here. There are no late newspapers and magazines in the recreation and reading room, and the television has not been working for a long time. An old refrigerator with a broken handle, the only one in the whole dormitory, requires repair. The drillers also have expressed no few complaints about the quality of the food in the workers' dining room at Poylu.

The explorers of the earth's depths are executing important tasks at Sazhdag. The administration and party and trade-union organizations of the Gobustan UBR should pay more attention and show more concern about the working and living conditions at remote oil-exploration locations.

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PROGRESS, PROBLEMS IN BUILDING NEW DONETS COAL BASIN MINE DISCUSSED

Kiev RABOCHAYA GAZETA in Russian 9 Jul 81 p 2

[Article by V. Deshko (Donetskaya Oblast): "Win Half a Year"]

> [Excerpts] The south Donbass [Donets Coal Basin]. This concept was put into practice recently, when the geologists were exploring for large industrial reserves of black gold about 80 kilometers to the south of Donetsk. Yuzhnodonbasskaya Underground Coal Mine No 1 went into operation and the modern Ugledar settlement grew up in short order here. So today, on the steppe, to the right of the road that goes from the Mar'inka rayon center to Pavlovka village, the outlines of structures that are inherent only to mines--temporary or permanent headworks--are seen distinctly against a background of green kolkhoz fields. They belong to still another new fuel complex--Yuzhnodonbasskaya No 3.

The walls of the room in which the construction project's party staff met for its regular meeting were covered with charts, drawings and plans for mining work, and tables. On one of them were the specifications of the future underground mine: design capacity--2.4 million tons of coal per year, 8,000 tons per day; industrial reserves--157 million tons; and operating life--70 years.

For a person who is not well acquainted with mining operations, this information can be given for reflection: the total budget-estimated cost of the capital investment for the project is, according to the design, about 129 million rubles; and the cost of the construction and installing work is 102 million rubles.

Introduction of the mine into operation ahead of schedule is an unprecedented occurrence for the Donbass in any case. And, in congratulating everyone who erected it for a great labor victory, Leonid Il'ich Brezhnev expressed confidence that the experience gained here in speedy erection of large coal-mining enterprises will be widely supported and propagated among all mine builders. These words were enthusiastically supported by the builders of Yuzhnodonbasskaya No 3. Relying upon the experience of their colleagues, they resolved to turn the mine over for operation not in 96 months, as called for by the design, but half a year earlier.

And now the construction project's party staff, which First Secretary of the Donetsk Gorkom of the Communist Party of the Ukraine V. P. Mironov heads, has met here again to discuss construction progress and unsolved problems related thereto. And they are many. First of all, the critical-path schedule still has not become law in the activity of the prime contractor--Donetskshakhtostroy [Donetsk Combine for the Construction of Underground Mines]--and of its subdivisions and subcontracting organizations. The plan for construction and installing work for the first 5 months had been carried out by 66.9 percent. In May matters had improved somewhat, but not very much (71.4 percent). In mining excavation work the phenomenon is reversed: the plan for the 5 months was carried out by 97.7 percent, but in May by 71 percent.

The staff members listen to the various sides and various levels. An objective picture is needed as to why there is such a great lag behind the schedule, what hinders the work, and what help is necessary. Chief of the prime contracting mine-construction administration V. Ye. Lopukhin, manager of Donetskshakhtostroy trust V. Ya. Vlasenkov, chief of Underground Mine Construction Administration No 13 A. S. Amel'yanov, and the subunit managers speak. As a result, the essence of the matter becomes clear. Work organization and engineering preparation are still at a low level, and machinery and mechanisms are being used poorly.

But there are also factors that the builders cannot eliminate. These are violations of the deadlines for the delivery of materials, equipment and machinery. The construction project receives only half of the required brick and prefabricated reinforced-concrete, and metal structure also arrives behind schedule--and with deviations from the design. The amount of drifting is being increased, so more mine-tunneling machinery and underground transport equipment are needed, but the tunneling cutter-loaders and electric locomotives still have not arrived. The guilty, who have not been providing for delivery in full amounts, are named. They are Donetskstroymaterialy [Donetsk Building-Materials Industry Association], where the general director is V. G. Tolstorebrov, the Donetsk experimental machinery plant Ukrshakhtostroy, which P. F. Grigorenko heads, and the Donetskzhelezobeton [Donetsk Reinforced-Concrete Products Association], which G. D. Andros supervises.

The facts presented at the party staff's meeting appeared to be far from a positive description. That is correct. They are slowing construction, and they received the main attention. But this, however, does not mean that everything is going poorly in the construction of Yuzhnodonbasskaya No 3. In giving out information, A. P. Godunov, deputy chairman of the construction project's trade-union staff, named many mine-construction and mine-tunneling collectives that coped excellently with the plan and commitments; they had been awarded challenge banners, pennants and bonuses.

He reported further on the fact that questions of arrangements for the amenities for people who work are being solved successfully. A large permanent-type dining room, where the quality of the prepared dishes is at the highest level of culinary skill, has been put into operation.

However, even A. P. Godunov had to listen to critical remarks about the trade union staff's inadequately active influence on progress of the competition and insufficient concern about creating conditions for highly productive work by the builders. The remarks were businesslike and timely. Many experienced collectives of builders and installers had been engaged in erecting the Komsomolets Donbassa Underground Mine, which definitely helped in its being turned over a year ahead of schedule. Now these people are returning to their own subunits, after gaining experience in speedy work. And the main thing now is to create for them suitable conditions for highly productive work and to apply and disseminate the advanced experience that they have gained.

Win half a year! The task for the mine builders is not a simple one. And even though not everything is going well here yet, and many links of the chain and contacts between the subunits of contractors and of subcontractors are still broken, this idea has already taken possession of the minds of all who are erecting the new underground mine.

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PARTIALLY BUILT MUBAREK GAS COMPLEX NEEDS MORE WATER

Tashkent PRAVDA VOSTOKA in Russian 25 Jun 81 p 1

[Article by M. Karamov, V. Petrov, A. Skorobogatov and V. Shumaylov: "Each Hour Is Expensive"]

[Text] During construction of the Mubarek Gas Complex.

The 13th report of the correspondents' center for PRAVDA VOSTOKA, SOVET UZBEKISTONI and UzTAG [Uzbek SSR Telegraph Agency].

There is a heat haze above the Karshi Steppe, and in the whitish sky is a merciless sun. Not long ago it was scorching the blossoming steppe, heating up metal so much that you will not touch it with your hand. Even in the evening it is not refreshing, and your face burns. The thermometer shows more than 40 degrees. But the people who are erecting the huge gas and chemicals complex do not stop the shockwork for even an hour.

Prior to Startup

Right now the construction workers and the installers have especially hot days, prior to the startup of a facility. A large number of facilities is being readied for turnover for operation. Most important of them is the second unit of the third phase of the gas refinery, which has a capacity of 1.5 billion cubic meters per year. Right now the prime contractor, Mubarekgazpromstroy [Trust for the Construction of Gas Industry Facilities at Mubarek], and its subcontracting installers and setting-up organizations have concentrated efforts right here. Their mission is to overcome the lag that was permitted at the start of the month and to prepare the unit for startup on 30 July, as called for by their commitments.

The installations for integrated treatment of gas at the Dengizkul'-Khauzak and Zevardy fields--the raw-materials base for the refinery's capacity--have gone to the startup regime. Unfortunately, a snag occurred here--the managers of Administration No 5 of Sredazneftegazmontazh [Trust for the Installation of Oil and Gas Field Equipment in Central Asia] considered that the job had been done and took almost all of their people away. As a result, the finishing off of the facility has been dragged out. However, right now, thanks to the intervention of the staff, the situation has been corrected.

And the startup of a new high-powered compressor station not far from the plant is getting close. According to the schedule it should be turned over in July, but already cleaning up and testing have started. The client for the plant should hurry up with delivery of the equipment that is lacking here. It is necessary to increase the pace of operations both in laying the LEP [power transmission line] and in erecting the electric substation, with a view to providing the compressor with power by the day it is turned over for operation.

Difficult Kilometers

There are people at the construction project who are not often mentioned at staff meetings. These are the drivers and those who work on the difficult steppe road. Around the clock, in all kinds of weather, they drive their heavily-loaded trucks, delivering thousands of tons of freight--from bread to the most complicated technological equipment and multiton reinforced-concrete structure--to the construction sites and to workers' settlements.

The Proletarabad Motor-Vehicle Transport Enterprise is engaged in the basic hauling here. The other day its collective was carrying out a unique operation--for practically one workday a powerful Uragan road tractor was hauling a 120-ton absorber column, 30 meters long, over the 110 kilometers from Karaulbagar to the Dengizkul' field. Usually such an operation lasts 4 or 5 days, and it is even necessary to use 100-ton truck cranes and to drive them to the delivery site.

But this time neither cranes nor additional time was required. An original motor-vehicle transport arrangement, which was designed by Soyuzuzbekgazprom engineers, helped.

There Is Still No Water....

In preceding reports from the correspondents' center it was noted that the gas complex was experiencing a severe water shortage: the Kashkadar'inskaya Oblast Municipal Services supplies 26,000 cubic meters of water daily, instead of the 40,000 called for by the agreement. As yet nothing has changed. The timely intervention of the republic's Minkomkhoz [Ministry of Municipal Services] is necessary: it is this agency that is obligated to provide a normal water supply for the construction project and to insure observance of contractual commitments by its subunits.

Right now the gas refiners are asking--give us just 5,000 more cubic meters of water per day, otherwise we will have to stop production.

Yes, today water is the complex's most severe problem. In a few days Bukharagazpromstroy [Trust for the Construction of Gas Industry Facilities in Bukhara] will complete construction of the Kuyumazar-Mubarek water line. But, first, a month will be required to fill and to flush out the 108-kilometer steel pipe. Second, it is planned to connect a multitude of customers to the water line along its entire route, both in Bukhara and in Kashkadar'inskaya Oblast.

Much also is to be done to improve the use of water at the gas refinery itself--to complete more rapidly the erection of the towers and of a condensation system that will enable spent steam to be used.

* * *

A new fuel base for the republic is being born by the enormous efforts and will of thousands of people. Their selfless shock work is a pledge of successful achievement of the intended goals.

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SOME PHASES OF CONSTRUCTION AT MUBAREK GAS COMPLEX LAG

Tashkent PRAVDA VOSTOKA in Russian 3 Jul 81 p 1

[Article by M. Karamov, Yu. Kruzhilin, V. Petrov and V. Shumaylov: "Let Fidelity to One's Word Be the Law"]

[Text] During construction of the Mubarek Gas Complex.

The correspondents' center for PRAVDA VOSTOKA, SOVET UZBEKISTONI and UzTAG [Uzbek Telegraph Agency] reports.

The first half of the year has passed. How are the builders of the Mubarek Gas Complex keeping their word?

Gas-refining unit No 3 (an installation for extracting gaseous sulfur), the Dengizkul'-Khauzak gas field and the third phase of the Zevardy gas field went into operation by the planned deadlines. Workers of Administration No 4 of Uzbekgazpromstroy [Trust for the Construction of Gas Industry Enterprises in the Uzbek SSR] and Administration No 3 of Naipgazstroy [Trust for the Construction of Gas Field Facilities at Naip] kept their word with honor. These collectives are laying claim to the challenge Red Banner of the Uzbek Communist Party Central Committee, the Uzbek SSR Council of Ministers, the Uzbek Trade-Union Council and the Uzbekistan Komsomol Central Committee

However, many builders are in arrears. Commitments to introduce a unit of gas-cleaner No 2 and the Kuyumazar-Mubarek water line have not been carried out. A boiler rated at 75 tons of steam per hour has not been hooked up.

Most worrisome is the situation in housing construction at Mubarek. A threat of disruption not only of the commitment but also of the plan for introducing new apartments has arisen.

Let us begin with the housing.

What Is an Apartment House Made of?

Mubarek still does not have its own panel-production facility. Apartment houses here are erected basically with brick, but this material is in short supply. The Kyzyltepa and Kokand plants, as well as enterprises of Kashkadar'ya itself, are systematically failing to ship brick to Mubarek. There is not enough hollow slab for ceiling floors and other reinforced-concrete parts that are produced by Uzstroyindustriya plants. There are not enough finishing materials.

For all these reasons, only about 10,000 of the 50,000 square meters of housing planned for the year were introduced in Mubarek during the first half of the year. Will it not turn out that new capacity that has been introduced with such great difficulty will lie idle because of a shortage of personnel...?

Today, fulfillment of the plan for introducing housing at Mubarek depends upon the ministries of construction and of building materials, on Soyuzuzbekgazprom itself, on the party organs of Kashkadar'inskaya, Bukharskaya and Ferganskaya oblasts, and on party organizations at the supplier plants. In order to correct the situation, it is necessary, first, to arrange in good time for the supplying of materials, and, second, to mobilize all the efforts of city construction organizations to fulfill the socialist commitment.

Do Not Give up the Stand

After an absorber was lifted onto the second unit of a gas cleaner, the installers were not able to remove the rigging in time. A lag had arisen. And their little difficulty entailed new delays. About 15 days were lost, and the schedule for introducing the whole installation failed. The prime contracting trust, Mubarekgazpromstroy, and the installing organizations are trying to correct the situation.

There is not enough room on the handkerchief-sized site to swing a cat: hundreds of workers, who are working in three shifts, were rushed here. But now the time has come when you do not accomplish anything with numbers. Basically new engineering approaches are required. Special precision and discipline are needed. It will be possible to overcome the delay if the supervisors of Mubarekgazprom and of Installing Administration No 9 know how to manifest these qualities. While Mubarekgazpromstroy is a collective that was working in shock-work fashion at the start of the year, it is giving up its stand. This is evident both at unit No 2 and at KAES-0--the booster compressor station that must be introduced in July. Work sophistication has been reduced. The construction sites are cluttered with junk, and they are all dug up.

The staff of the Central Committee of the Communist Party of Uzbekistan, having examined the situation at both facilities, has planned measures for their unconditional introduction during July.

Bukharagazpromstroy [Trust for the Construction of Gas Industry Facilities at Bukhara] is finally completing construction of the Kuyumazar-Mubarek water line: water has been fed into the 107-kilometer line. After the artery is filled, they will test it and flush it out, and it will start operation. R. Sultanov, manager of the prime contracting trust, assures us that this will occur 15 July. It is high time! At the Urtabulak and Dengizkul' fields they have had to bring in water not only for production operations but even for drinking. Meanwhile, the

Kashkadar'inskaya Oblast Municipal Services has increased somewhat the supplying of water to Mubarek. But this is entirely too little. The water that is lacking can be found if the construction project is accorded the attention it deserves.

Follow-up on Articles from the Correspondents' Center

We have been reporting serious deficiencies in supplying builders and Mubarek refinery workers. Certain steps have been taken.

The Soyuzuzbekgazprom URS [workers' supply administration] has shipped to Mubarek six carloads of mineral water and sent an additional lot of tobacco articles. The republic's Mintorg [Ministry of Trade] has been authorized to allocate additional commodities to the URS. It is true, the obltorg [oblast trading organization] of Kashkadar'ya is not hurrying to carry out the instruction. And even the URS itself is not taking steps to put an end to the shortage first of salt, then of matches, then of cotton-seed oil, then of macaroni....Indeed, none of these commodities is in short supply at all....

The situation with respect to vegetables is completely incomprehensible. The main supplier of this item for the young city of gas-field workers is the farm of Mubarekskiy Rayon itself. According to the URS's testimony, in the past half year they have not given the city dwellers 1 ton of the 163 agreed tons of vegetables. The little bit that it has been possible to import from Bukhara does not solve the problem.

* * *

> Three months remain before introduction into operation of the Mubarek Gas Complex. Delays in the "intermediate touches" should not affect the overall result--at which the efforts of all the participants in the work have been aiming.
>
> In September growth of 9 billion cubic meters of gas-recovery capacity and of 5 billion cubic meters of refining capacity is to be provided for. The collectives of builders gave the motherland their word. Fidelity to one's word should be the law.

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CAPACITY OF MUBAREK GAS TREATMENT FACILITIES TO BE INCREASED

Tashkent PRAVDA VOSTOKA in Russian 14 Jul 81 p 1

[Article by UzTAG [Uzbek SSR Telegraph Agency] (Mubarek, Kashkadar'inskaya Oblast: "Capacity Higher Than Designed"]

[Text] During construction of the Mubarek Gas Complex.

Engineering practice has known few such cases: a facility exceeds design capacity 1½-fold during startup and setting-up work.

The scene of the event is the field facilities site at the new Dengizkul-Khauzak gas field. The design contemplated that fuel coming from the wells would feed into two integrated gas-treatment installations (UKPG's), each with a throughput of 1 billion cubic meters per year. The total is 2 billion. A third, reserve installation has been installed alongside--in case one of the main installations goes out of operation during a peak-load period.

Each UKPG is an impressive piece of equipment: impurity absorbers, heat exchangers, expansion coolers, regenerators, pipelines, pumps and control and monitoring instruments. The gas is cleaned of condensate and dried in these multiton installations and is brought up to the required temperature before being sent to the refinery for processing. The collective of Construction and Installing Administration No 3 of Naipgazstroy [Trust for the Construction of Gas Industry Facilities at Naip] and its subcontracting organizations constructed and erected these installations.

The erection of the installations was completed precisely on the date called for by the socialist commitment, and much earlier than the date called for by the norms. The quality of the work proved to be so high that the questions came up involuntarily: why should only two UKPG's operate and the third stand idle? That is not economical.

"But indeed a reserve is needed...."

"Yes, a reserve is needed," says Mubarekgaz [Mubarek Gas Industry Administration] chief I. R. Kelesh. "It is needed for certain. We thought: but we and the builders have time that was won during the competition. There are test workers and engineers who have just completed much work and have gained experience. And there is still a set of equipment for one more UKPS: it arrived several months ahead of time for another field. Why not send the equipment here, to Dengizkul'? For in the future a fourth installation will still have to be installed."

In good time they asked the designers--the Novosibirsk Branch of NIPIgazdobycha [Scientific-Research and Design Institute for Gas Recovery Facilities] for an official opinion. After studying the proposal, they came to the conclusion: it is correct. The contractors willingly agreed to carry out the above-plan work. Soyuzuzbekgazprom drivers, after mobilizing their creative capabilities, managed to deliver the units, some of which weighed more than 100 tons, to the construction site in a short time.

As a result, by the time the state commission was to sign the acceptance document for the new gas complex, they were presented with not three but four installations. The Dengizkul'-Khauzak field will yield not 2 but 3 million cubic meters of gas per year.

So it was that the challenge Red Banner, which is awarded monthly to the best builders of the Mubarek Gas Complex, was awarded for good reason to the collective of SU-3 [Construction Administration No 3] of Naipgazstroy for June's results. A well-deserved award!

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AIR-CUSHION VEHICLE MOVES 400-TON OILFIELD PUMP STATION

Moscow IZVESTIYA in Russian 10 Jul 81 p 6

[Article by V. Klepikov (Tyumen'): "400 Tons on an Air Cushion"]

[Text] A 400-ton pump station assembled at Sibkomplektmontazh [Siberian Association for Supplying Complete Sets of Equipment] has been delivered to the far-off Lyantor oilfield. It came to its workplace on an air-cushion vehicle.

Even earlier the Tyumeners had created "hovering platforms," but they lifted less than 60 tons of freight. For hauling consolidated assembled members over the swamps, more powerful transport means were required.

On order of Sibkomplektmontazh specialists, the West Siberian Branch of VNIIneftemash [All-Union Scientific-Research and Design-Development Institute for Petroleum Machine Building] produced in a short time working drawings for the fabrication of an air-cushion vehicle for a completed modular pump station. The necessary parts were fabricated at a machinery-repair plant. A flexible skirt was hung, not on the platform but directly on the pump module housing. Two powerful blowers with 800-hp engines forced air under the bottom of the unusual structure, holding the station above the ground.

Tyumen' erectors helped Lisichansk Industrial Textiles Plant workers, who sent almost 1½ thousand square meters of strong materials made of special fiber for the air curtain. Workers of the Yaroslavl' Rezinotekhnika association made this fabric impermeable to water. The Siberians fabricated the metal structure locally.

The station made the trip, starting along the Ob', and then along the shallow Pim, to the Lyantor field (200 kilometers north of Surgut). The uneventful journey indicated that such heavy objects can be moved anywhere that a shallow-draft launch tug or swamp buggy will go.

This experience indicates that it is possible and necessary to build up remote oilfields and, especially, arctic gas fields, during the current five-year plan, precisely by the large-module method, reducing labor expenditures at construction sites to a minimum. Next is the Yamburg gas field on the Tazovskiy Peninsula; here there are no travel routes except the Ob', and there are another 200-300 kilometers from its shores to the facilities.

The successful experiment, obviously will interest everyone who is connected with the integrated development of West Siberia. Builders, foresters and geologists need an air-cushion vehicle with high load-lifting capability. It will be able to greatly expand the zone of operation of the river fleet through the use of shallow, unnavigable rivers. It would appear that it would be most convenient of all for shipbuilding enterprises to arrange at once for the production of the new type of transport.

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SEVERAL UNDERGROUND MINE ORGANIZATIONS FALL BEHIND

Moscow TRUD in Russian 11 Aug 81 p 1

[Article by N. Budnikov, secretary of the Central Committee of the Trade Union of Coal Industry Workers; and A. Chebotayev, section chief of the trade-union central committee: "All Reserves into Operation"]

> [Text] We are checking on the fulfillment of the competition agreements.
>
> Let us name the winners:
>
> M. Chikh's brigade from the Mayskaya Underground Mine of Rostovugol' [Rostov Coal Production Association]. With commitments to mine 560,000 tons of coal during the first half of the year, the collective sent 592,406 tons of fuel to the surface.
>
> P. Yermakov's brigade from the Vorgashorskaya Underground Mine of Vorkutaugol' [Vorkuta Coal Production Association]. With commitments to mine 467,000 tons of coal during the first half of the year, the collective sent 508,910 tons of coal to the surface.
>
> Yu. Bronnikov's brigade from the Severnaya Underground Mine of Vorkutaugol'. With commitments to mine 433,600 tons of coal during the first half of the year, the collective sent 502,550 tons of fuel to the surface.

The brigade and section collectives that have been competing under the agreement that was concluded in the pages of the newspaper TRUD at the start of the year have summed up the results of their work for the first 6 months. What does an analysis indicate?

Let us recall that the competition is going on for the annual mining of at least 500,000 tons of fuel. In all, 90 collectives are participating in the competition. In the first 6 months of the year, the sections and brigades whose leaders had signed the "500,000-tonners" agreement mined 28 million tons of coal and shale.

Three brigades--those of M. Chikh, P. Yermakov and Yu. Bronnikov--have already produced more than 500,000 tons. They are, respectively, the leaders of the competition.

The breakage-face brigades at the Vorgashorskaya Underground Mine of Vorkutaugol' are laboring highly productively. Here six collectives are working in a regime for mining 600,000 tons per year. But here is a contradictory fact. At the well-known Karaganda Underground Mine imeni Kostenko, three of the four collectives that are included in the drive to mine 500,000 tons per year have not coped with the commitments and have fallen short by more than 75,000 tons of coal.

The brigades of I. Sorochinskiy from the Oktyabr'skaya Underground Mine of Vorkutaugol' and of K. Markelov from the Underground Mine imeni 50-letiya Oktyabr' of Gukovugol' [Gukov Coal Production Association] and the sections of A. Potapov and S. Semenov from the Vorgashorskaya Underground Mine of Vorkutaugol' and of Yu. Yamov from the Podmoskovnaya Underground Mine of Novomoskovskugol' [Novomoskovsk Coal Production Association], the brigade of A. Gel'by from the Novokuznetskaya Underground Mine of Yuzhkuzbassugol' [Southern Kuzbass [Kuznetsk Coal-Basin] Coal Production Association], the section of B. Lyan from the Molodezhnaya Underground Mine of Karagandaugol' [Karaganda Coal Production Association], which mined, in all, 330,000 tons more of coal in the second quarter than in the first, are stepping up the pace of coal mining.

At the same time, 39 of 90 collectives did not cope with the commitments that were adopted for the first half of the year. Eight brigades permitted a substantial lag, having mined less than 200,000 tons of coal.

Out of eight brigades that committed themselves to mine 1 million tons of fuel per year, only two are working at that pace. The greatest arrears were permitted by the brigade of V. Devyatko from the Raspadskaya Underground Mine of Yuzhkuzbassugol'. This brigade has mined 201,000 tons--55,000 tons of it in the second quarter.

According to the work results for the second quarter, certain collectives have reduced the mining of coal since the first quarter. Let us name, as an example, the section supervised by V. Turikovich from the Underground Mine imeni Kostenko of Karagandaugol'. Here only 19,000 tons of coal were produced. Continuing this list are the brigades of P. Vasilevich from the Korkinskaya Underground Mine of Chelyabinskugol' [Chelyabinsk Coal Production Association], V. Bardyshev from the Novokuznetskaya Underground Mine and V. Gotsenko from the Raspadskaya Underground Mine of Yuzhkuzbassugol'.

Indeed, were the administration and trade-union committee of the Raspadskaya Underground Coal Mine serious when they recommended V. Lesnikov's brigade (after the replacement of brigade leader V. Gotsenko) for participation in the All-Union competition of the "500,000-ers." This collective mined only 76,800 tons of coal during the first half of the year, producing an average of fewer than 500 tons per day.

Serious miscalculations in the engineering basis for the commitments adopted, and also in supporting stable work of the collectives were committed in Intaugol' [Inta Coal Production Association]. Out of four highly productive longwalls here, during the first half of the year the fulfillment of commitments was provided for in only one case. The work of the administration of the Zapadnaya Underground Mine, where, because of lack of a work front, the sections of A. Zhaleyko and V. Glagolev were compelled to work at paired longwalls, was criticized for the results of the first quarter. Measures for rapid cutting of a longwall for one of the collectives and its introduction in June were called for. However, because of irresponsibility and serious errors, the longwall has not been put into operation up to the present.

All three brigades from Roven'kiugol' [Roven'ki Coal Production Association] failed to carry out the socialist commitments that had been adopted. Among them are well-known collectives led by N. Skrypnik from the Underground Mine imeni Frunze and G. Motsak from the Coal-Mining Administration imeni Kosmonavty. The first brigade did not create an adequate front for breakage-face operations in good time, and the second is working in poor ground, where a high pace of mine-face advance is necessary and intensive mining is hampered by an inadequate feed of ventilation air to the longwall. The third brigade, under P. Mar'yanenko, because of a lag in preparation of a new longwall, slowed the working of the old one, thereby aggravating the mining-geology conditions at the mine face. During the second quarter the brigade sent 77,000 tons of coal to the surface, which is not much more than half as much as in the first quarter.

In Leninskugol' [Leninsk Coal Production Association], three out of the five did not cope with the planned goals. The work results of I. Shvet's brigade from the Kuznetskaya Underground Mine, which continues to work below its capabilities, provokes special concern. The supervisors of the mine and of the association have, in their words, "lost" faith in the brigade's potential to remain in the ranks of the "500,000-ers." What an outcome! For indeed, their duty committed them to create successful working conditions for those who are competing.

The economic supervisors and trade-union committees should extend active help to the collectives of sections and of brigades that have undertaken high socialist commitments. Not in words, but in deeds. And to answer through the newspaper what steps have been taken to improve the work of the collectives that are lagging behind the intended goals.

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FUELS

GAS PIPELINE SAFETY ZONES NOT FULLY RESPECTED IN AZERBAIJAN

Baku VYSHKA in Russian 2 Aug 81 p 2

[Article by R. Verdiyan, chief inspector of the Caucasus Regional Inspectorate of USSR Glavgosgaznadzor [Main Administration of the State Gas Inspectorate]: "The Protected Zone"]

[Text] Gas has firmly entered the everyday life of the Soviet people. This is the most convenient, accessible and inexpensive fuel. The party and the government have given gas industry workers major, responsible tasks for further developing the industry. One of these tasks was formulated like this in the "Basic Directions" for the country's economic and social development during the 11th Five-Year Plan: "Erect high-capacity trunk gas pipelines with a high degree of automation and operating reliability."

The Causasus, and Azerbaijan in particular, are in a part of the country with a developed network of trunk gas pipelines. In the last five-year period alone such high-capacity gas-transport arteries as the 400-kilometer second strand of the Kazi-Magomed-Kazakh trunk pipeline, the 350-kilometer Yevlakh-Stepanakert-Nakhichevan' gas pipeline, the Dashgil'-Kalmas gas pipeline and a large number of lines that feed the blue fuel to the republic's rayons were built in our republic.

During the 11th Five-Year Plan, aside from the construction of numerous natural gas feeder lines to industrial and agricultural facilities and communities, still another gas-transporting giant--the 700-km Mozdok-Kazi-Magomed trunk gas pipeline--is to be put into operation. And in the first year of the five-year plan, gas pipelines to the cities of Dzhul'fa, Ordubad, Agdzhabedy, Zangelan and other cities will be built.

But building a gas pipeline still is not everything. It is important to provide for its normal operation, to preclude damage to the pipeline. Therefore, construction norms and regulations establish the minimum distances from compressor and gas-distribution stations and from the axes of trunk gas pipelines to communities and to industrial and agricultural structures.

Depending upon the diameter of the gas pipeline, the operating pressure, and the nature of the structures, this distance can reach 700 meters. The operators usually call this the protected zone. In this zone it is categorically prohibited to erect any kind of buildings, permanent or temporary structures or roads, to make arrangements for field camps or enclosures for cattle or hay storage, and so on.

Unfortunately, there are a multitude of cases where the established rules that relate to protected zones are grossly violated. The locating of a large number of apartment houses within the protected zones of the Karadag-Tbilisi and Kazi-Magomed-Kazakh gas pipelines and in Kasum-Ismailovskiy, Akhsuinskiy, Geokchayskiy, Agdashskiy and Kazakhskiy rayons causes concern. At the same time the ispolkoms of local soviets do not take active measures to correct the situation. This reproach should be made primarily against the Kasum-Ismailovskiy Rayon Ispolkom. However, despite a categorical order to remove the strctures from the protected zone, everything remains as before. Even when Aztransgaz [Azerbaijan Gas Transport Association] included in the plan, to the detriment of its own interests, the transfer of a 10-kilometer section of the indicated gas pipeline and began operations there, supervisors of the rayon's farms began to put obstacles in the way of this.

A recent investigation of trunk pipelines indicated that there are within the protected pipeline zones, in all, 207 different structures in Kasum-Ismaylovskiy, Lenkoranskiy, Astarinskiy, Agdashskiy and Akhsuinskiy and other rayons.

The fact that the number of farms that are violating the protected zone is increasing in some rayons is alarming. Recently, for example, two more objects have appeared in the protected zone of the Yevlakh-Nakhichevan' gas pipeline.

The list of violations could be continued. Supervisors of local soviets and enterprises forget that violation of the protected zone of trunk gas pipelines is fraught with dangerous consequences and it poses a threat to the health of people and storage of valuable materials. The requirements to provide normal conditions for operations of the trunk gas pipelines, which will preclude the possibility of the creation of an emergency situation, must be fulfilled without fail.

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STARTUP OF NEW UKRAINIAN COAL MINE MAY BE DELAYED

Kiev PRAVDA UKRAINY in Russian 28 Jun 81 p 2

[Article by I. Glyan'ko, Ye. Guzhva and A. Zharkikh (Sverdlovsk, Voroshilovgradskaya Oblast): "Deadlines Are Obligatory"]

[Text] In the Donets steppe, alongside the mining town of Sverdlovsk, the Dolzhanskaya-Kapital'naya Underground Mine and a grouped coal preparation plant are being erected. These facilities should be turned over for operation this year. The minebuilders well understand: they have a fairly complicated task ahead of them and they are applying no small efforts toward putting new Donbass [Donets Coal Basin] coal enterprises into operation as rapidly as possible.

I. N. Poberezhnyy's brigade from the Stakhanov Mine-Construction Administration is working in shockwork fashion. This collective in May alone did 21,400 rubles' worth of construction and installing work, while its commitment was 18,300 rubles' worth. The brigades of P. D. Landar' and Yu. R. Shpir, tunnelers under A. A. Kurinskiy, workers of the in-mine transport section, and many others are achieving high results.

Let us note right away that the plan was overfulfilled during the first 5 months of this year for total amount of construction and installing work and for assimilation of capital investment. But still, today's pace of erecting some of the facilities is not high enough for completion of the entire construction site on time, as set by the commitments.

"Right now we have almost 40 tunneling, construction and installing organizations at work," says N. Ivanov, first secretary of the Sverdlovsk party gorkom and chief of the party's staff for construction. "And you yourselves will understand, it is complicated to coordinate and to monitor all the time the multitude of questions that arise and to eliminate bottlenecks responsively. And so it happens that an overall success somehow conceals the still-existing deficiencies and reassures certain supervisors. In order to introduce the coal enterprises into operation strictly on schedule, we will still have to wage a decisive drive against worktime losses, use machinery more effectively, and improve the organization of work and production operations. The construction project's party staff regularly examines all these questions, analyzes and directs the work of the party organizations and party groups, and mobilizes the workers for successful execution of the tasks set.

These days one of the most important facilities for erection of the mine is the main skip bore. When it is started up, the problems of speeding up the transport of rock to the surface and of raising the pace of tunneling for mine excavations will be resolved. The mine builders have been committed to completing all the work on this important production complex in August. For this purpose, it is necessary primarily to erect and to actuate the lifting machinery and to turn the electrical substation over for operation.

In the machine room of the headworks, all the construction work has been practically completed. Preparations are being made here for the setting-up work on the lifting units. K. A. Baziyevskiy's brigade is installing the electrical portion of machine No 2 at an ahead-of-schedule pace. V. M. Volkov's installers accomplished complicated work: aligning the electric motor with the lifting machine. Considering the enormous dimensions of these mechanisms, the workers have performed the most complex operation with jewellike precision. For the tolerances here are rigid: the radial tolerance should not exceed 0.2 millimeters, the axial tolerance 0.15 millimeters.

The collectives of the Stakhanov and Sverdlovsk mine-construction administrations, Installing Administration No 5 of Yuzhelektromontazh [Electrical Installation Trust of the Southern Economic Region], Sverdlovsk Mine-Construction Administration No 4, and other subcontracting organizations are trying to complete on time all the work assigned to them.

The picture is entirely different at the electrical substation. According to the critical-path schedule, the facility should have been ready in June. And this is very important. For right now the industrial complex is getting current from a temporary electric substation with two transformers of 10,000 megavolt-amperes capacity each. Introduction of the main skip lift into operation and, in general, the work of all sections of the mine and the preparation plant depend upon the new substation. But, to speak frankly, it will not be possible to start up the electrical substation in June or, maybe, even in July. And here is why. During the remaining time, about as much investment funds remain to be assimilated as have already been assimilated altogether since the start of this year. And up till now there has not been enough manpower, and there is a shortage of equipment.

A place of strenuous work is the underground tunnels. In order that the main bore may begin to send out rock, it is required that preparations be made at the start of July for the installation of a number of mine excavations--the chamber for the 2LU-120 drives, the chamber for the starting and regulating apparatus, and the western main conveyor line.

V. P. Cherkasov's brigade from Mine-Tunneling Administration No 10 has committed itself to turning the drive chambers over by 1 July. But this is provided that there will be no delay with lumber. Already today, for instance, there is a severe shortage of square-sawn plank, from which formwork is made for concreting the excavation of the complicated configurations. The Sverdlovsk plant Stroydetal' ships these planks (1 to 2 cubic meters each) but only on order of Sverdlovskshakhtostroy [Sverdlovsk Mine-Construction Trust]. In order not to hamper the tunnelers, Voroshilovgradshakhtostroy [Voroshilovgrad Mine-Construction Combine] is committed to giving orders on time for shipping the lumber from neighboring plants--the Krasnodon, Krasnoluki and other plants.

The concreting of floors (450 square meters) is being completed in the chamber for the starting up and regulating apparatus. A small amount of work was left at the western conveyor artery. But again, lumber is holding it up. The tunnelers are compelled to fashion the crossties and planking themselves in order to prevent loss of time on the workshift.

Four years ago the framework of the headworks tower was erected and a bore 8 meters in diameter was sent to a depth of 680 meters. It would seem that everything there would have been completed. But, unfortunately, up until now it still is not clear what the skip equipment for lifting machine No 1 will be. Moreover, Yuzhgiproshakht now and then gives the Voroshilovgrad Mine-Construction Combine's Administration No 4 its next puzzle: it introduces design changes. And this when the giant mine has entered the start-up period. Here is a recent case. The tunnelers had already fixed the inclined excavation for the metering hopper, after which they removed the machinery that had brought the loads to the surface, and they began to install the servicing platform. And suddenly the designers required that the excavation's cross-section be increased. Again they have to install a rock-carrier line, plank over the permanent loading platform for the reception of lumps of concrete, and hollow the walls. A whole month will be spent on this, and that means that the planned work will be disrupted.

Not everything is harmonious either in V. D. Rubenskiy's brigade, which is lining bunker interiors with cement. Here there is not enough sheet iron, rails and electrodes.

As we see, no few production problems should be resolved if the main shaft of the Dolzhanskaya-Kapital'naya is to be turned over for operation in August. Party and trade-union organizations must work on it. It is necessary to promote still further competition among mine-construction collectives for fulfilling plan tasks ahead of time.

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ROLE OF TECHNICAL INSPECTION SERVICES IN BAKU OILFIELDS EXPLAINED

Baku VYSHKA in Russian 4 Aug 81 p 2

[Article by A. Kuptsov, chief of the Azerbaijan Division of the Technical Inspection Service of Nefteprommashshefmontazh (Baku): "From Design to the Well"]

> [Text] Two years ago the ministries of chemical and petroleum machinebuilding and of the oil industry created a technical inspection service (STN) within Nefteprommashshefmontazh. Its functions include monitoring the quality of oilfield equipment from the moment of the creation of a test model thereof to its installation and operation.
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> There are now 30 STN divisions operating in the country's oilfields. The article below by A. Kuptsov, chief of the Azerbaijan Division of the STN, tells about the first results of the new service's work and the tasks that it faces during the 11th Five-Year Plan.

As is known, there are many ways to raise the technical level of articles. One of them and, perhaps, the most important one, is improvement of the methods of monitoring quality. These functions are usually entrusted to the technical inspection section of the enterprise. The OTK [technical monitoring section] does much work, but, nevertheless, does not always by far, by virtue of the restriction of its sphere of activity, have an active influence on improvement of the qualitative and operating characteristics of the machinery that is being produced. Therefore, it was necessary to create special services that would be able not only to systematically inform developers and manufacturers about design deficiencies and the degree of reliability of articles, but also to monitor the quality of these articles, literally from the drawing board to manufacture, installation and operation.

What has now been done by the new subunits of the two ministries, particularly by our Azerbaijan Division of the technical inspection services?

First of all, I will note a reduction in the periods of idle time of equipment made in Baku. Thus, while in 1980 assemblies, units, lifters, erecting cranes and other equipment produced at the Machinebuilding Plant imeni Kasimov, the Machinebuilding Plant imeni Sardarov and the Kishlin Machinebuilding Plant had, for example, stood idle at the oilfields of the Nizhnevartovskneftegaz, Surgutneftegaz, Permneft', Udmurtneft' and other associations for 2-7 months, waiting for plant or design defects to be eliminated, during the past 6 months they have waited only 12-20 days. And that is not bad.

For example, as the result of a check of technical documentation of the Bakinets-3M unit, which was developed at AzINMash [Azerbaijan Scientific-Research Institute for Oil Machinebuilding], STN workers found discrepancies in components of the fuel tank and cab unit. At the request of our workers, these deficiencies were eliminated.

Many complaints arrive from oilfield workers about the quality of gusher and blowout preventer equipment being manufactured at Soyuzneftemash plants. Together with representatives of the Plant imeni leyt. Shmidt, the Plant imeni S. M. Kirov and AzINMash, we checked the quality and completeness of outfitting and manufacture of the fixture. It was observed that in almost all the sets of spare parts, attachments, valves, quick-assembly connections, and many other things were lacking. After our intervention the shipping of this equipment was stopped, and measures were taken not to allow similar violations henceforth.

At the Bakinskiy Rabochiy plant, where pumping jacks are manufactured, the technical inspection services workers, at the request of the oilfield workers, paid attention to the fact that poor quality welding and painting was being tolerated on many machires. As a result, deviations from the prescribed technology were eliminated. In accordance with our recommendation, two brigades of experienced welders from AzINMash and VNIIPTneftemash [All-Union Scientific-Research and Industrial Design Institute for Oil Machinebuilding] were sent to the plant. And the machining of reduction-gear pulleys was taken under monitorship, where defects of castings at times remained uncorrected.

It must be said that we considered our main purposes to be not the observation of violations of technology but the prevention thereof. Therefore, when Quality Days are held at enterprises being monitored, our representatives play an active role.

At the Bakinskiy Rabochiy plant, for example, during these days we discussed, along with other important questions, progress in the introduction of advanced technology in the machining of bearings at the Plant imeni leyt. Shmidt. We held a conversation with workers of the assembly section about the way to prevent defects during the fabrication of preventers, and their correct preservation.

The service is doing much work in Azneft' [State Association of the Azerbaijan Oil Industry], at whose enterprises more than 12,000 units of oilfield support equipment and drilling equipment and about 23,000 bottom-hole pump rods arrived in the last quarter alone.

The quality of the elevators for tubing that are manufactured by the Ishimbay Machinebuilding Plant caused serious reproaches on the part of the oilfield workers of the NGDU [Oil and Gas Recovery Administration] imeni 26 bakinskiye komissary. The bail had not been turned over, and the "insurance" lever had a great deal of slack. At the call of the service, representatives of the plant visited the field, in order to look into the causes of these defects.

Let us note that our service constantly follows up on the conditions for the storage, transporting, installation and operation of oilfield support equipment at all oil and gas recovery administrations. In the past 3 years alone we checked operating conditions of more than 800 units of equipment and 17,000 bottom-hole pump rods. I will name the most typical violations of the rules for operating the equipment. These are: storage of the rods in a heap, causing them to warp (especially at the NGDU Shirvanneft' oilfield facilities), and the hauling of bottom-hole pumps on transport equipment not adapted for that purpose, which leads to misalignment of their sleeves and the wedging of their plungers.

Another "illness" of the oilfield workers is the fact that they do not counterbalance the pumping jacks and do not secure their bolted connections. This leads to vibration, the reduction gear and electric motors of the pumping jack going out of order. The situation is especially unfavorable in regard to the NGDU of Karadagneft'.

Or take another one: the footings under the pumping jacks are built in accordance with technological specifications only in the NGDU imeni 26 bakinskiye komissary. In other oil and gas recovery administrations they are made in accordance with obsolete drawings, which causes the equipment to go out of order prematurely.

As we see from the factors cited above, it is not always the designers and machine-builders who are the guilty ones when machinery does not give full yield. A thrifty attitude toward the equipment and tools and the correct operation thereof has as much importance as the quality of fabrication of the equipment at the enterprise itself.

The impression may have been created in the readers' minds the opinion that we want this article to publicize our service's good work. This is far from the case. The STN collective is aware that there are still no few oversights in its activity, we do not always extend our help and intervention in time where they are needed, and we do not always show the proper exactingness, either toward those who create the equipment or toward those who operate it.

We still have not solved some problems connected with the STN organizational structure. For example, the service still operates under a temporary statute that does not say precisely to whom we should address our orders and recommendations at Ministry of Petroleum Industry enterprises. And this often impedes the elimination of deficiencies that are noted in the operation of equipment.

Workers of the Azerbaijan Division of the Technical Inspection Service will do everything possible to contribute their mite to successful solution of the tasks set by the 26th CPSU Congress and the 30th Congress of the Azerbaijan Communist Party in the area of increasing production effectiveness and raising output quality.

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SUCCESSFUL GAS RECOVERY, TREATMENT AT ORENBURG LAUDED

Moscow SOTSIALISTICHESKAYA INDUSTRIYA in Russian 28 Jun 81 p 1

[Article by M. Umanskiy (Orenburg): "Orenburg's Gas"]

> [Text] The Order of Lenin--an award for the valorous labor of Orenburgskaya Oblast's gas-recovery workers--has appeared on the Banner of the All-Union Industrial Association Orenburggazprom.

...A breeze blew, forming waves that floated and wavered in the green grain all over the boundless steppe. Grain--whatever you look. But under the ripening heads still another rich resource of Orenburg's earth is concealed--gas. From here, from the foothills themselves of the Urals, the transcontinental steel artery Soyuz begins its marathon. A high-capacity stream of gas rushes to our country's enterprises and to countries of socialist collaboration.

From afar the gas-treatment complex reminds one of an enormous ship, floating about the sea of grain. The treatment plant's tall pipes heighten the similarity.

"More than 250 billion cubic meters of natural gas have been recovered and refined here since the complex started up," gas-treatment plant director R. Gal'perin tells us. "During the last five-year plan alone our customers received 11.5 billion cubic meters of the 'blue flame' above the plan, and, since the start of this year, still another billion...."

There are almost no people around. Enormous separators, high-capacity installations and tall air-cooling towers operate automatically. Automation cleans hydrogen sulfide and carbonic acid from the gas, dries it, and removes sulfur, condensate and other components. Only in the operators' booths, at control panels, sit shifts of specialists on duty.

"From here," the director explains, "the whole refining process can be controlled completely: we can change the temperature and degree of purification and regulate reactant consumption...."

Orenburg gas is unusual--it has a very high sulfur content, which makes it highly toxic. How to integrate this dangerous characteristic with the grain field around the oilfield? This is the main question that came up before the complex's creators. The country's best scientific efforts were enlisted to solve it.

Here, for the first time in gas-industry experience, integrated measures were worked out back at the design stage to conserve nature. Special tough steels resistant to aggressive influences, inhibitor protection of pipeline walls and welded joints, and 100-percent heat treatment were applied. The facilities were constructed as highly airtight systems. All the structures, including the wells, pipelines and integrated gas-treatment installations, have protective arrangements that automatically eliminate possible leaks.

Would it seem that still more could be done? But the scientists went further, deciding to place about the field numerous instruments of an automated system for monitoring the status of the air basin. It will determine the level of gassing on land more than a thousand square kilometers in area. But the tall motley grass and the disorderly din of the frogs alongside the complex itself and the wild ducks that fly hurriedly over the installations testify more convincingly to the purity of the air than all the sensors.

But what did they do with the hydrogen sulfide, which causes so much bother? They put it at the service of industry. An excavator was filling railroad freight cars on a special platform with yellow lumps of sulfur. The cost of caked, granulated, lumped or liquid sulfur obtained here is one-third less than that of sulfur smelted from ore. And the degree of purity is 99.99. Four nines that are difficult to achieve! Orenburg sulfur has been awarded the State Emblem of Quality for its merit. It is highly prized for producing artificial fiber, matches and paints and for vulcanizing rubber, and it is widely used in medicine and agriculture.

But sulfur is only one of the many valuable components that Orenburg gas contains. At the Salavat Oil-Refining Combine they obtain liquid fuel from the condensate--the gas's main companion substance. Here a rich mixture of liquid hydrocarbons, butane, propane and pentane is received....Each day 1,000 tons of the liquefied gas arrive in Central Asia from Orenburg in special tank cars.

"Our main task during this five-year plan has become an expansion of the integrated use of substances contained in the gas," states VPO Orenburggazprom chief, Hero of Socialist Labor Yu. Vysheslavtsev. "At the end of this year, for example, the Orenburg-Kazan' ethane pipeline should be put into operation. It is planned that new installations will be built to extract mercaptans--a valuable chemical raw material--from the gas."

Not far from the gas-treatment plant, units that remind one of the shape of space rockets have been built. The solar gas--helium, which also is obtained from Orenburg's natural storehouse, originated in them. The industrial production of helium based on this gas complex has no equal in world experience. A progressive processing scheme enables additional capacity for the separation of ethane and other valuable components to be established here.

But the Orenburg gas field still has not said its last word. Drillers are at work a half-hour's drive from the oblast's center. Brigade foreman V. Lipatov is carrying out an important operation: the lowering of a multimeter steel column into a well. Assistant drillers N. Korotenkov, T. Abdulganeyev and F. Glazkov are feeding the next pipe from the rack and are joining it to another, which has been lowered into the hole in the rotary table. Driller P. Shikhov touches the brake lever. And now, with the howling of the diesel, the string goes underground.

I remark that there are not so many mechanisms around the drill rig.

"Everything is proper," says foreman V. Lipatov with a smile. "A new organization for work has been introduced in the brigade. Without waiting for completion of the penetration of one well, we start preparatory work on another. As a result, we gain a week, and the idle time involved is reduced to a minimum."

The strong, coordinated collective of Orenburg drillers is one of the best in the industry. High penetration rates have enabled the earth explorers not only to create a backlog of work started on preparations for well operations but also to undertake to extend help to Kazakhstan's geologists in mastering the Karachazanak gas field. Conditions there are much more complicated than at Orenburg: well depths reach four to five kilometers. But this does not disturb the pioneer drillers. The work here is proceeding successfully.

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KANSK-ACHINSK MINES SENDING TOO MUCH COAL TO POWER PLANTS

Moscow SOTSIALISTICHESKAYA INDUSTRIYA in Russian 8 Jul 81 p 2

[Article by Department of Heavy Industry: "Once More About 'Excess' Coal"]

> [Text] On 19 May 1979 our paper published an article by manager of the Coal Industry Sector of the Krasnoyarskiy Kray CPSU Committee B. Pichugin, "'Excess' Coal." It alluded to the fact that the plan for mining Kansk-Achinsk brown coal does not correspond to the requirements for it. USSR Minenergo [Ministry of Power and Electrification] issues, as a rule, overstated orders and then power stations refuse to take the "excess" coal. In the final analysis it is the miners who suffer. The article proposed that the plan for coal mining at KATEK [Kansk-Achinsk Regional Power-Engineering Complex] strip mines be coordinated with precision with the potential at Minenergo power stations for storing and burning the coal. The editorial board received responses in good time from the concerned organizations, which enumerated the measures that would enable the problem to be solved.
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> Two years have passed since the paper's publication. What has changed during this time?

It is evidently worthwhile to begin with an incident that occurred in August last year. At that time Novosibirsk TETs-3, which gets coal from the Nazarovskiy Strip Mine, had met the goal for procuring coal that had been established for 1 October 1980. Back on 6 August the TETs director, D. Sysoyev, notified Krasnoyarskuglesbyt [Krasnoyarskiy Kray Coal Marketing Administration] that from 3 to 27 August the station would not be able to receive coal. How can it be that the Novosibirsk power engineers' funds had not been completely spent, yet their requirements for coal had been completely satisfied? It means that "excess" Kansk-Achinsk coal continues, as before, to thrive!

Since the Nazarovskiy miners have a plan, the shipments of coal continued, although in lesser amounts. In the middle of August Comrade Sysoyev reported that 225 cars were then waiting for unloading and requested a cessation of coal shipments, warning that Krasnoyarskuglesbyt will pay for the idle car time.

And here are the results. In 24 days of August alone Irkutskenergo [Irkutsk Regional Power Administration] rejected 61,000 tons, Novosibirskenergo 86,000 tons, and Krasnoyarskenergo 95,000 tons of controlled fuel. Similar refusals to accept Kansk-Achinsk coal occurred in the fall of 1980. It turned out to be, in essence, "excess" coal. The plan requires that the coal be mined but Minenergo power stations are not able to store and process it.

After publication of the article, "'Excess' Coal," Deputy USSR Minister of Coal Industry M. Shchadov concurred in a response to the editorial board that it is desirable to establish, along with the actual plan, an additional task for the mining of Kansk-Achinsk coal. This task is called upon, in case of necessity, to compensate for unforeseen requirements for coal, but this plan should be projected precisely in accordance with the power and storage capacities of the USSR Minenergo electric-power stations.

That, it would seem, was done. The Krasnoyarskugol' Association established for 1980 a plan for 41 million tons and a supplementary task of 900,000 tons of coal. But then the plan for this year was increased by 2 million tons and no supplemental task was set. Thus, everything returned to its former position. The problem that was posed in the article remains unresolved. And what answers do the concerned ministries and agencies have for it? It is the right time to turn to them.

Writing in SOTSIALISTICHESKAYA INDUSTRIYA 2 years ago, B. Pichugin proposed to increase the capacity of USSR Minenergo's coal storage. The fact is that, while the standard for the coal reserve at the storage facilities of Krasnoyarskenergo electric-power station is 40 days, the actual storage volume enables only a 15-day reserve to be stored. It happens that for Krasnoyarskenergo alone, storage capacity must be almost tripled. Former Deputy USSR Ministry of Power and Electrification Yu. Nekrashas reported that in the next few years it was planned to expand coal storage at Krasnoyarskaya TETs-2, Novo-Irkutskaya TETs-6, Ust'-Ilimskaya TETs and Barnaul'skaya TETs-3. Deputy USSR Gossnab Chairman G. Ivanovskiy also wrote about the restricted capacity at electric-power stations.

In brief, everyone had concurred with the newspaper article. But, in reality? According to our data, in the time that has elapsed since the article was printed, storage capacity at Krasnoyarskenergo, Novosibirskenergo and Irkutskenergo power stations has not been increased, but yet the goals for building up coal reserves have been set at the former amounts.

Deputy USSR Gosplan Chairman A. Lalayants explained the phenomenon of overstated plans for the mining of Kansk-Achinsk coal and the subsequent revisions thereto by the fact that USSR Minenergo does not carry out measures to increase storage capacity. This could be concurred with if the plan for the miners had not been revised 10 years in a row! Indeed, the storage capacity is known at the time the funds for coal are allocated, as is also the fact that the capacity most likely will not be increased. But, as before, the planners make up the plan without taking this into account. According to preliminary estimates, Krasnoyarsk's coal miners are to mine 800,000 tons of "excess" coal in the third quarter of the year.

The Accountability Report of the CPSU Central Committee to the 26th Party Congress stated: "Obviously, the time has come to tighten up the requirements for both planning discipline and the quality of the plans themselves. A plan should, it goes without saying, be realistic and balanced." These words apply in full measure also to planning for the mining of KATEK coal.

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WORKLOADS FOR NEW MINES NOT BASED ON SOLID DATA

Kiev RABOCHAYA GAZETA in Russian 12 Aug 81 p 1

[Article by V. Shevchenko, chief operating engineer of the Oktyabr'skoye Mine Administration (Donetsk): "Calculations and Miscalculations"]

> [Text] From the experience of the Oktyabr'skiy Rudnik Underground Mine: Why it is difficult and, at times, absolutely impossible to master the designed capacity of new underground coal mines.

The underground mine Oktyabr'skiy Rudnik (10-bis "Glubokaya") went into operation in January 1975. Its second name, "Glubokaya" [Deep], speaks for itself: its lower operating boundary is located at a depth of 1,400 meters. If it is considered that mines that are working seams at depths of more than 600 meters are considered "deep," then Oktyabr'skiy Rudnik is one of the deepest in the Donbass.

But the deeper the coal seams, the worse the mine-geology conditions: mine pressure and temperature are raised, gassing is increased, and the number of outburst-prone seams and the intensity of sudden coal and gas outbursts grow.

Moreover, large areas of unstable roof rock--more than 60 percent of the mine floor--have been found at Oktyabr'skiy Rudnik, a factor which, unfortunately, was not considered by Dongiproshakht [Donetsk Branch of the State Institute for the Design of Underground Mines], the originator of the design.

All this taken together also affected the operating process. Mine-geology conditions were worsened, industry did not master series production of IGSh-68 cutter-loaders of the first standard model, which had been specified in the design, and the miners were left with nothing to do but replace them with KM-87E longwall-mining complexes, which are not adapted to the operating conditions. The unstable roof has begun to cave in, often to a height of up to 7 meters, and the IK-101 cutter-loader, which is included in the complex, greatly increased the labor intensiveness of the operations at the longwall end sections. For it is one matter to work with a cutter-loader that cuts its own starting notches, eliminating the need to prepare recesses, and another to work with an ordinary machine, with which labor expenditures are considerably higher.

And so, one of the ideas of the design--1,000-ton workloads per longwall--went up in smoke.

But more than one type of harm was done. In hurrying to "report" introduction of the new underground mine into operation, the prime contractor--Donetskshakhtostroy [Donetsk Underground-Mine Construction Trust]--turned it over with a work front that was inadequate for mining operations and much unfinished work: about 100 items, which were eliminated only in the third quarter of 1980.

And thus another idea of the design turned out to be bankrupt--mastery of the mine's design capacity with a view to reaching, as a result, the goal of 1.8 million tons of coal per year.

Since, upon construction of the Oktyabr'skiy Rudnik Underground Mine, the reality turned out to be, to put it mildly, not what the designers expected, Dongiproshakht should have given us a design for further development of the mine. It has been in the institute's plan since 1978, so one has to be simply amazed: we have not received it to this date.

It is difficult to say how the Oktyabr'skiy Rudnik miners would be living and working had it not been for miners of the Oktyabr'skaya Underground Mine, with whom they make up one underground-mine administration. Thanks to their selfless help (the Oktyabr'skaya Underground Mine undertook an additional amount of mining), the mine-administration collective successfully coped with the state plan under the 10th Five-Year Plan back in 24 June 1980 and sent to the surface an additional 930,800 tons of coal. Moreover, it is worth adding that the mine administration was awarded the Order of Lenin for carrying out ahead of schedule the tasks and socialist commitments that had been adopted.

Thanks precisely to this help, the Oktyabr'skiy Rudnik collective managed to develop a front for mining operations and to bring the number of operating breakage faces up to 7 and their length up to 1,237 meters.

Simultaneously, equipment replacement was going on at the breakage faces. Each new longwall was being equipped with KM-87P and KM-87UMP longwall mining complexes, which are more suitable for the mine's geological conditions.

All this was quickly telling on the results of the work: the workloads per longwall during the first half of 1981 averaged 444 tons per day, and the Oktyabr'skiy Rudnik mine carried out the standard workload established in accordance with the schedule for mastering capacity.

I will remark directly--it would have been impossible to achieve even this result without a precise program of operations. And there is one at the enterprise. This is an integrated plan of engineering and economic measures, which includes the engineering developments of the mine administration's specialists and the recommendations of the scientific-research and design institutes. Just like at the Komsomolets Donbassa Underground Mine, these were considered in monetary terms and in dates of realization, and responsible persons were designated to carry them out. In sum, the Oktyabr'skiy Rudnik Underground Mine will still be required during the 11th Five-Year Plan to prepare and put into operation 17 breakage faces with integrated mechanization, and to do, at the same time, more than 73 kilometers of mine tunneling and to assemble and incorporate in the work a large amount of mining equipment.

The set of measures for mastering the Oktyabr'skiy Rudnik's design capacity also included such important questions as improvement of the miners' working and living conditions, a reduction in the proportion of heavy manual labor, a rise in the degree of comfort at great depths and in work safety, and preservation of the environment.

Nevertheless, the main thing that inspires confidence in the collective, which has set for itself the goal, despite the great disparities between reality and the design, of seeing to it that the Oktyabr'skiy Rudnik mine is brought up to design capacity, is the enthusiasm, which is multiplied by a sense of duty. And this duty was engendered by the decisions of the 26th CPSU Congress, which gave miners the task of further strengthening the country's fuel complex. This is why the Oktyabr'skiy Rudnik mine collective has subscribed to the appeal of the miners of the Komsomolets Donbass Underground Mine to exert all their efforts on seeing to it that not one of the republic's coal enterprises fails to master its design capacity during this five-year plan.

In conclusion I would like to say: sometimes during the design and construction of new underground mines there is an orientation toward, figuratively speaking, birds in the sky--not toward actually existing equipment but toward equipment that has been designed, and, perhaps, will be brought into series production by the time that construction is completed. Forecasts of the thickness of the seams and of the geology of their deposition are made according to preliminary exploration that is far from complete. In being founded on such data, new coal enterprises are often called mines of the future, and large capacity and superhigh workloads are planned for them. But when a new mine is turned over for operation, its collective, when confronted with completely different realities, must for long years strive for the designed target, often without reaching it.

Isn't a bird in the hand better? This costs the country's economy less. And it is simpler to build up capacity when you "stand firmly on the plan."

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